

New Product Forum

2014
POWERTEST
CONFERENCE

NETA

AEMC

Model 8435 Weather Tight Power Quality Analyzer



Copyright 2014 AEMC® Instruments

Key Features

- ✓ Measures TRMS voltages up to 1000Vrms AC/DC for two-, three-, four-, or five-wire systems
- ✓ Measures TRMS currents up to 6500Arms (sensor dependent)
- ✓ Records and displays trend data as fast as once per second for one month up to 40 variables
- ✓ Captures up to 210 transient occurrences on all V and A inputs, 50 snap shots and 10,000 alarm events
- ✓ Measures harmonics to 50th (referenced to the fundamental or RMS value) for volts, Amps or power
- ✓ Recording, time stamping and characterization of disturbance (swells, sags and interruptions, exceedence of power and harmonic thresholds)
- ✓ Measures energy VAh, VARh and Wh
- ✓ 65µs/sample (256 samples/cycle)
- ✓ 2GB SD Card for Trend Recording memory; Alarm, Snapshot, Transient and Inrush stored in internal flash memory



Basler Electric Company

2014 POWERTEST[®] CONFERENCE

New Product Presentation

 **Basler Electric**

www.basler.com

Basler Electric Company Overview

Manufacturer of:

- Protective Relays
 - › Multi-function Protective Relay Systems
 - › Component (single function / discrete) Relays
 - › Retrofit Plug-n-Play Solutions
- Digital & Analog Voltage Regulators (AVRs)
- Digital Excitation Control Systems up to 10,000A excitation current
- Genset Controllers & Monitoring Equipment
- Custom Dry Type Transformers
- Injected Molded Parts

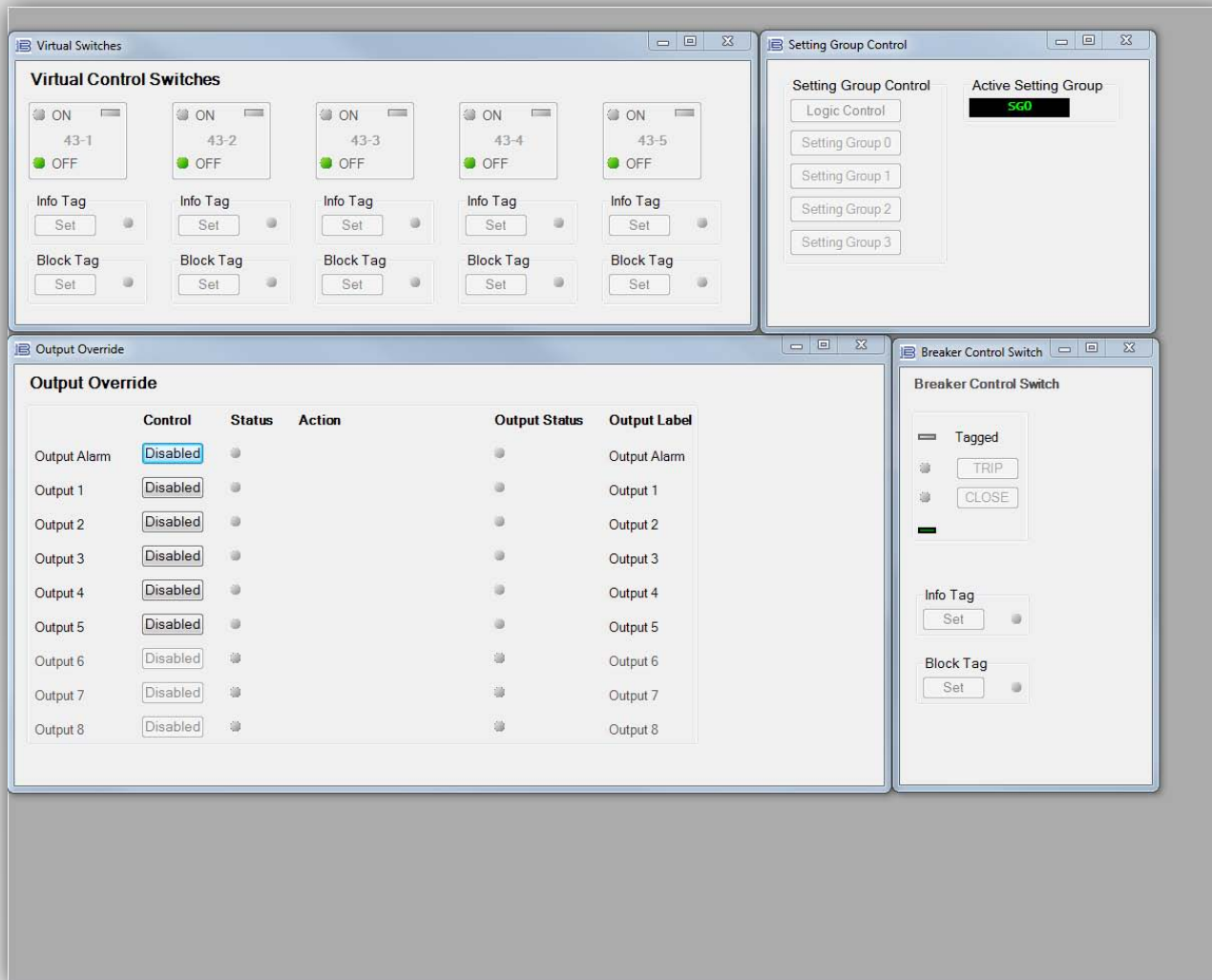
Application Oriented Models



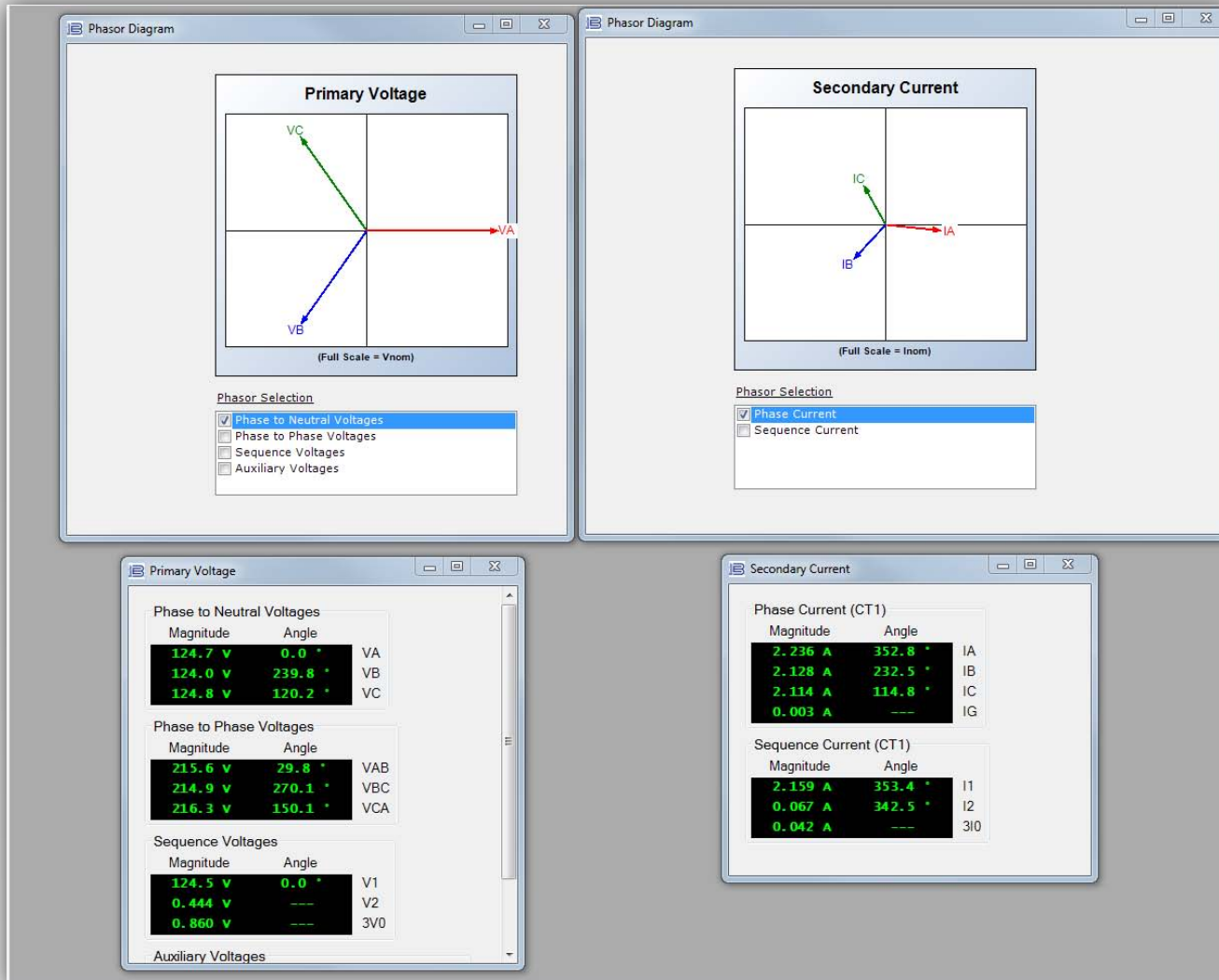
- Feeder
- Intertie
- Generator
- Transformer
- Motor



Metering



Metering



Settings

Loss of Excitation - Impedanc...

▼ X

Loss of Excitation - Impedance Based

40Z Element

Mode

Non Voltage Control ▼

Directional Supervision Angle (°)

-15.0

mho Characteristic 1

Diameter (Secondary ohms)

1.0

Offset (Secondary ohms)

1.1

Time Delay (ms)

0

Voltage Pickup (Secondary V)

0

Voltage Time Delay (ms)

0

mho Characteristic 2

Diameter (Secondary ohms)

1.4

Offset (Secondary ohms)

1.1

Time Delay (ms)

0

Voltage Pickup (Secondary V)

0

Voltage Time Delay (ms)

0

Loss of Excitation

Loss of Excitation - Impedance Based (40Z) Setting Information

⌵ X

Description

40Z Element - mho Characteristic 1 - Diameter (Secondary ohms)

Range

Min:

0.1

Max:

100.0

Increment:

0.1

Settings

BE1-11

System Summary

ProtectionReporting, Alarms and Control

Current

	Mode	Mode
50-1	3ph	51-1 3ph
50-2	3IO	51-2 I2
50-3	~	51-3 3IO
50-4	~	51-4 IG
50-5	~	51-5 ~
50-6	~	51-6 ~
		51-7 ~

Voltage

	Mode	Mode
24		25
27P-1	1 of 3	27X-1 Fund
27P-2	3 of 3	27X-2 ~
27P-3	~	27X-3 ~
27P-4	~	27X-4 ~
27P-5	~	
59P-1	1 of 3	59X-1 V2
59P-2	3 of 3	59X-2 ~
59P-3	~	59X-3 ~
59P-4	~	59X-4 ~
		78V

Setting Group Selection

Group 0 Normal

Group 1

Group 2

Group 3

Breaker Failure

50BF

Current Differential

Mode

87 ~ 87N-1

Frequency

	Mode	Mode
81-1	Under	81-5 Over
81-2	Under	81-6 ~
81-3	~	81-7 ~
81-4	Over	81-8 ~

Power

	Mode
32-1	3 of 3
32-2	3 of 3
	40Q

Impedance

21-1 40Z

21-2 780OS

Remote Analog Inputs

	Mode	Mode
ANALOG-1	~	ANALOG-5 ~
ANALOG-2	~	ANALOG-6 ~
ANALOG-3	~	ANALOG-7 ~
ANALOG-4	~	ANALOG-8 ~

Legend

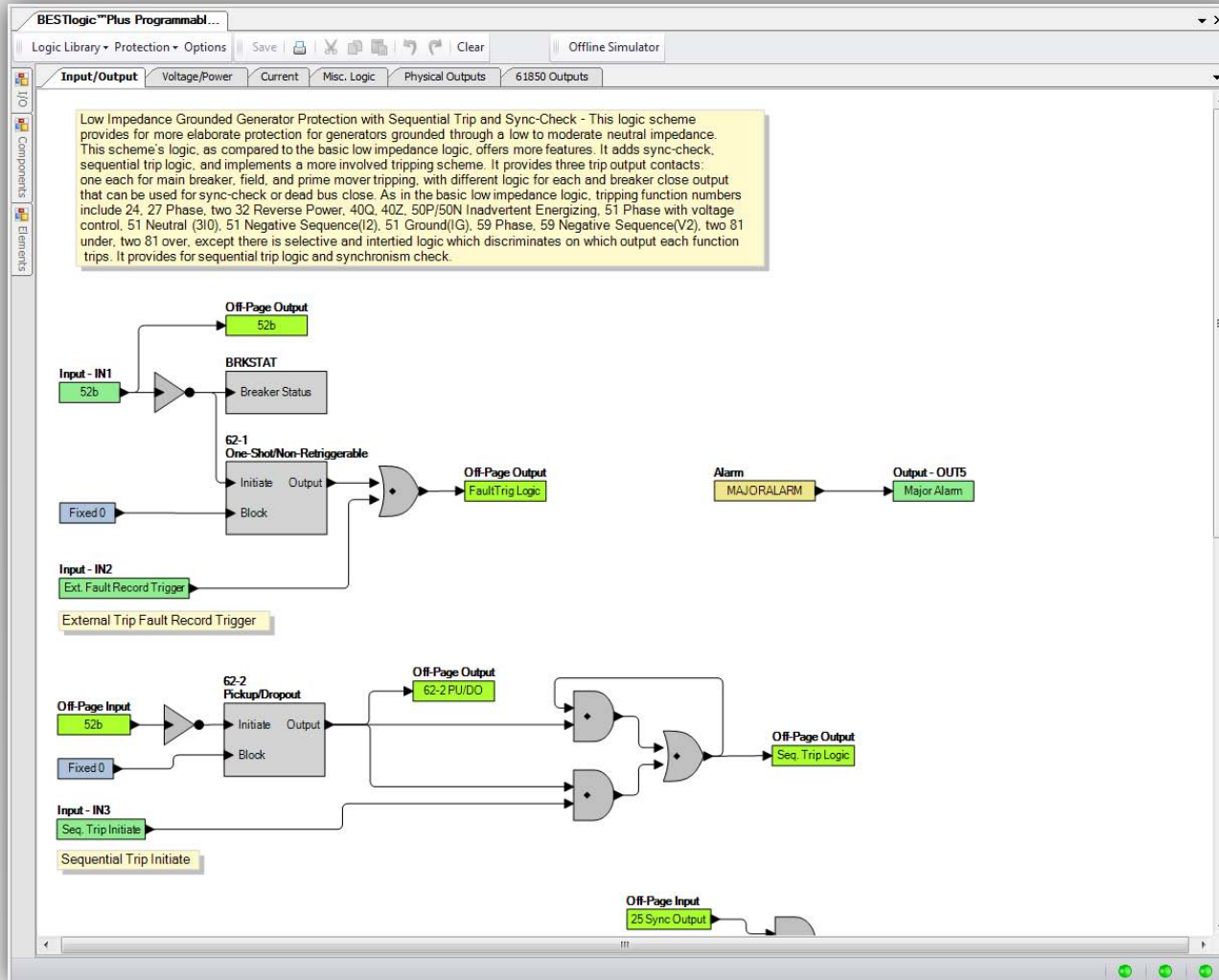
Enabled

Disabled by Setting, Mode Enabled

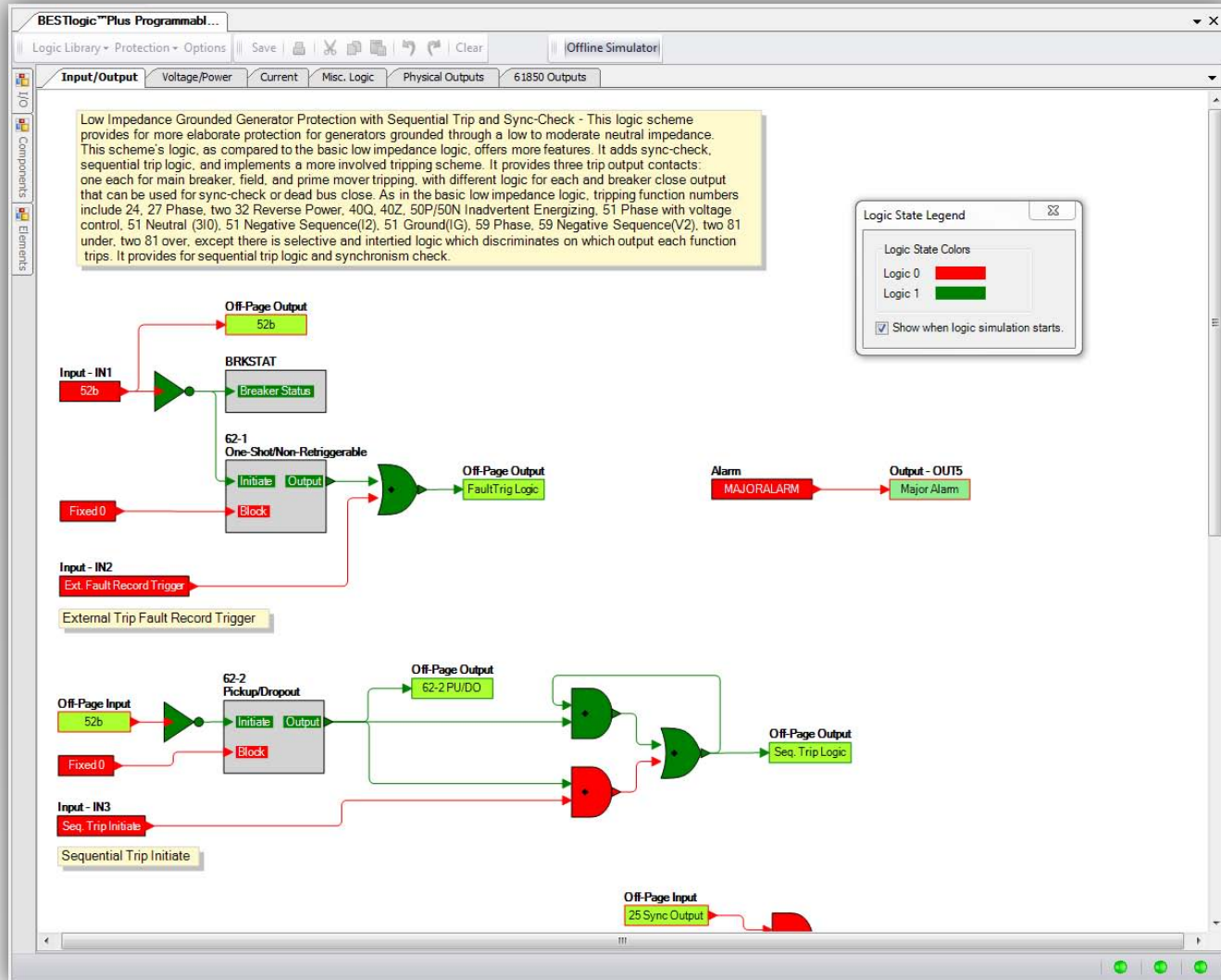
Disabled by Mode, Setting Enabled

Disabled

Logic



Logic



Thank You

Visit Booth 206 for a BE1-11 demonstration
For more information, visit www.basler.com



CBS ArcSafe, Inc.

Distance Is Safety[®]

CBS ArcSafe[®]

A Group CBS Company

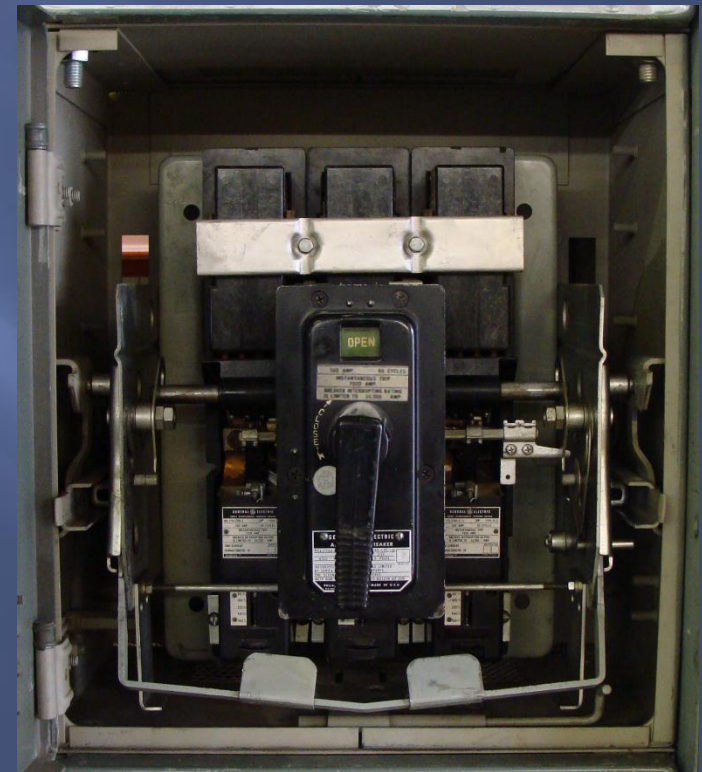


RRS-2 Tooling For GE AK-1-25

CBS ArcSafe[®] RRS-2
Universal Remote Racking System
For Non-Rotary Style Breaker Racking Mechanisms

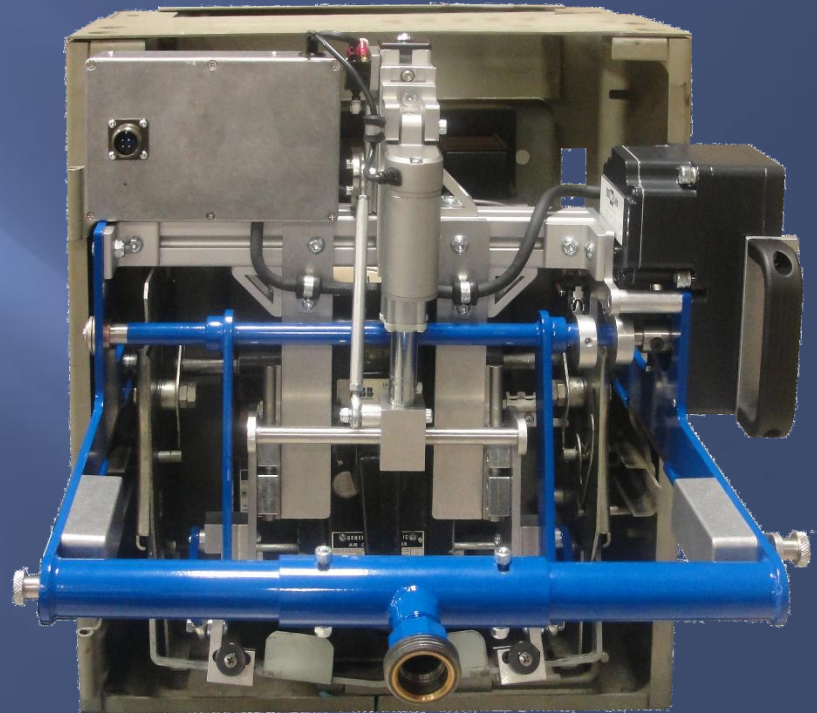
Tooling Overview

- ▣ Newly introduced tooling for industry leading RRS-2 remote racking system
- ▣ First tooling on the market capable of performing the complete racking operation for the GE AK-1-25 low voltage circuit breakers
- ▣ No modification to the existing breaker or switchgear is required for remote operation
- ▣ Tooling may be utilized on lineups with up to a four-high breaker configuration



Tooling Safety

- ▣ Users stationed up to 300' outside the arc flash boundary during remote operation
- ▣ Reduces operator fatigue, therefore increasing productivity
- ▣ Eliminates all manual contact with the gear during the operation, reducing or eliminating the need for expensive and bulky PPE



Distance Is Safety[®]

CBS ArcSafe[®]

A Group CBS Company

RRS-2 Tooling For GE AK-1-25

Please Stop By Booth #607
For More Information

Circuit Breaker Analyzer, Inc.

Circuit Breaker
Analyzer, Inc.™

A Group CBS Company

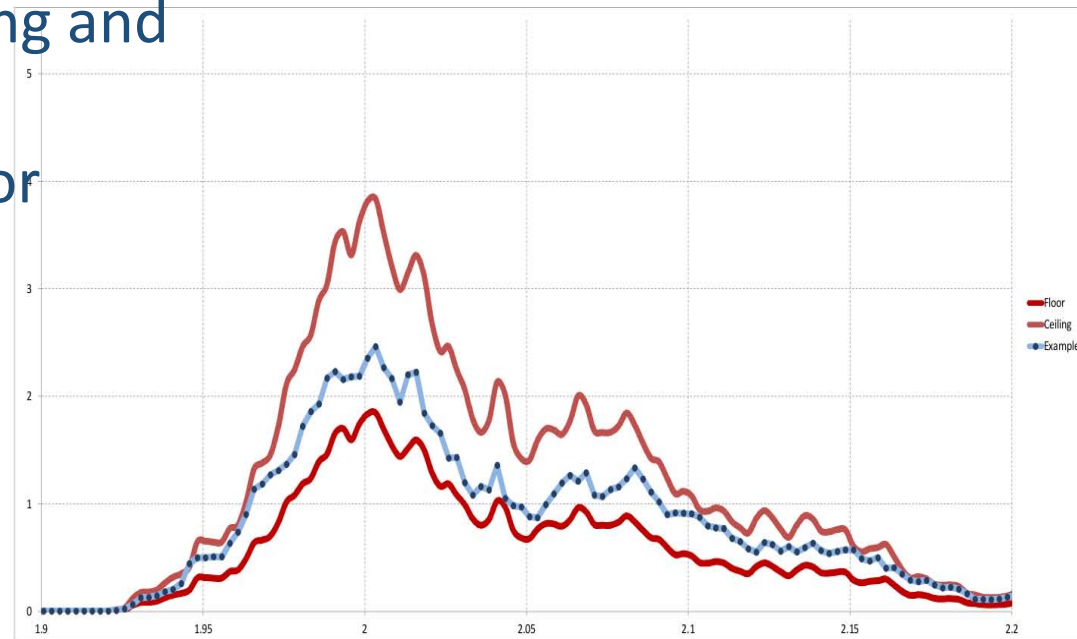
CBAnalyzer for Windows 7



CBAnalyzer for Windows 7

CBAnalyzer compares precision vibration data to “known good profiles” to determine:

- Overall mechanical condition
- Arc flash study validation checks
- Breaker timing: opening and closing time
- First trip testing data for arc flash compliance



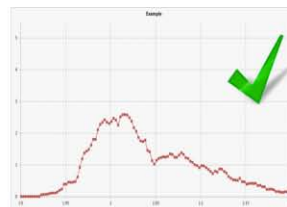
Features

- Testing without removal or electrical connections
- Data Trending
- Equipment Management
- Manual Comparison Tool
- Vacuum Bottle Test
- Vector signature graph
- Generate, print, and store breaker reports
- Instructional Videos
- Fourier Transforms
- Barcode Scanner
- Extreme Portability

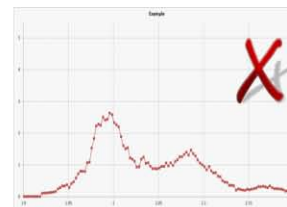


Year 1

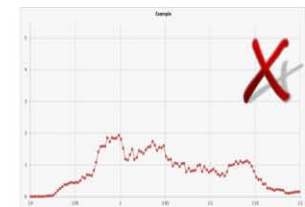
Year 2



Year 3



Year 4



Year 5



CircuitBreakerAnalyzer, Inc. A Group CSI Company

New Test > Test Settings

Equipment data

Location: B2 Elevators
Type/Model: DS-206 (Square D)
Asset Tag: 14-38717-022a
Description: Square-D DS-206 Example Equipment.
Cycles: D, C
Service Schedule: 4-3-2011, 10-19-2011

Physical Status: Open Manual Removed
Closed Electric Connected
Test Sequence: Close Close/Charge Close/Charge/Open Close/Open/Charge Open Open/Charge/Open/Close/Open/Close/Open/Close/Charge

Temperature: < 0 °F 0 - 50 °F 50 - 100 °F > 100 °F

Sample Rate: 100Hz 400Hz

Test Results:

Equipment	Result
AM-416-250 Demo... 02-935685-019 A1 Heaters 12/10/2013 06:30:28	FAIL
DS-206 Demo Equ... DS-206 (Square D) 14-38717-022a B2 Elevators 12/10/2013 06:55:11	PASS
DS-632 Demo Equ... DS-632 (Westingho... DS10128 A1 Feed Water 12/10/2013 06:43:38	PASS
5 HK 250 Demo E... 5 HK 250 1200A (Br... 01-123419-012b A1 Heaters 12/31/2013 13:55:55	FAIL
VR-SKV-250 Demo... VR-SKV-250 MVA (... 35-123135-864	PASS

Create New Equipment

CircuitBreakerAnalyzer, Inc. A Group CSI Company

Manage Equipment

Create Equipment

Type/Model: <All>
Serial Number:
Barcode:

Asset:
Date of Manufacture:
From: Select a date To: Select a date
Location: <All>

Search Clear Filter

Pic	Serial Number	Asset	Last Result	Last Test Date	Edit	Barcode
	AM-4.16-250 Demo Equipr	02-935685-019	FAIL	12/10/2013		
	DS-206 Demo Equipment	14-38717-022A	PASS	12/10/2013		
	DS-632 Demo Equipment	11-10128-115	PASS	12/10/2013		

Circuit Breaker Analyzer, Inc.TM

A Group CBS Company

Visit us at booth #808

For More Information:

www.cbanalyzer.com

(972)290-0074

Circuit Breaker Sales Co., Inc.



Current Affiliations and Memberships

Solving Electrical Problems Worldwide

Charlotte - Dallas - Gainesville - Houston - Irving - Lakeland - London (UK) - Phoenix - Provo - Seattle - Tulsa



What you need!
When you need it!

We are available 24/7
(800) 232-5809



BREAKER BOARDS & B2B PLATFORMS

Circuit Breaker Sales has reinvented its on-line store to provide a better, more user friendly interface.

In addition we have created a B2B website in addition to B2C.

All NETA members will be sent access to the B2B website.

Once logged, B2B Partners will see not only more competitive pricing but they will also have access to our technical libraries including our new

BREAKER BOARDS

What are Breaker Boards?

BREAKER BOARDS

CIRCUIT BREAKER SALES CO., Inc.
A Group CBS Company

Circuit Breaker Sales Exploded Diagram Series:

Westinghouse DS-416

**Assembly and Sub-Assemblies
Part Identification Guide**

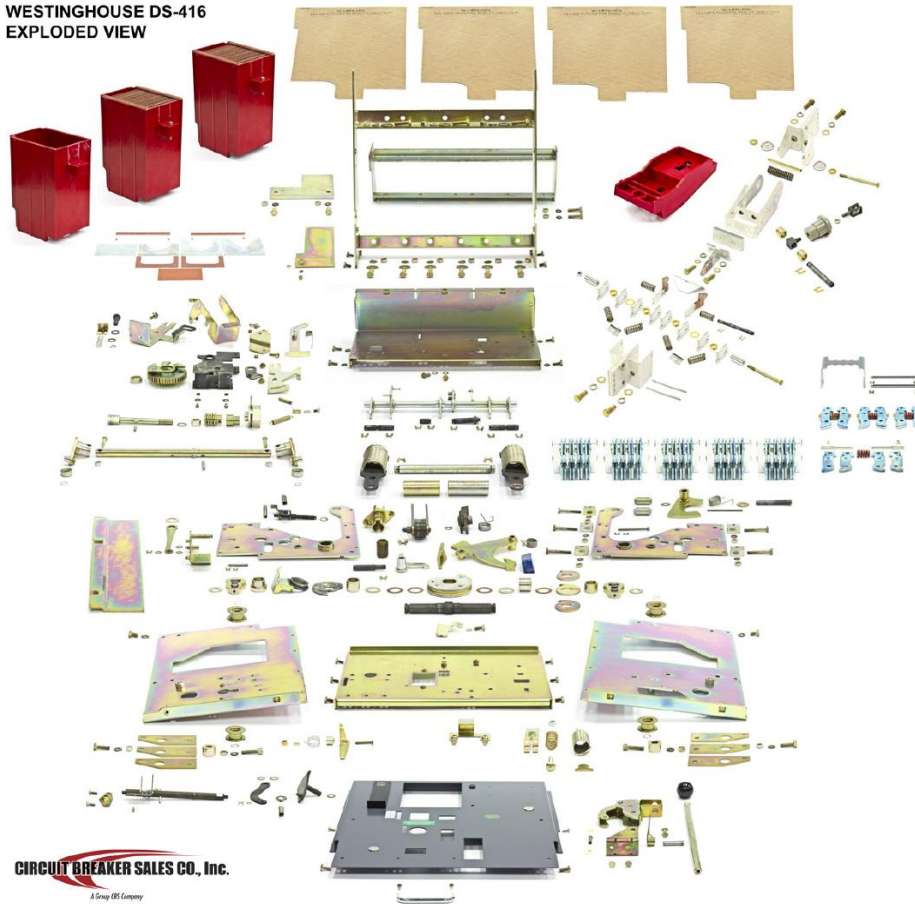
1315 Columbine, Gainesville, TX 76240 - Telephone (940) 665-4444 - Fax (940) 665-4681

Breaker Boards are exploded views of all industrial power circuit breakers. Starting first with air frame and vacuum equipment, we will soon have a Board for every breaker made in USA.

DS-416 Exploded View

[Westinghouse DS-416](#)

**WESTINGHOUSE DS-416
EXPLODED VIEW**

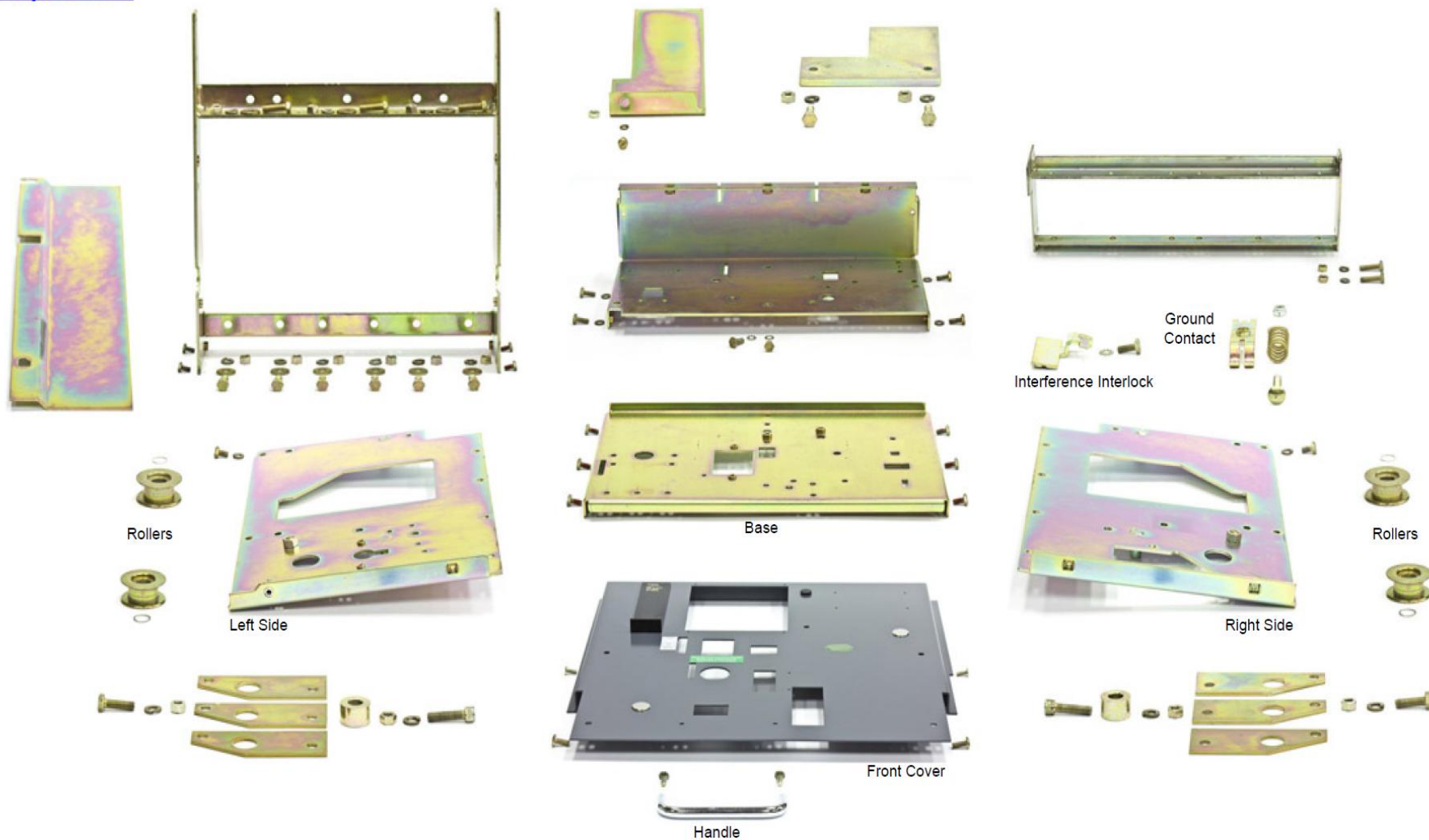


Breaker Boards
detail ALL parts in
the circuit
breaker.

Being able to
identify
components is the
number one
problem when
seeking to repair
or maintenance
this type of
equipment.

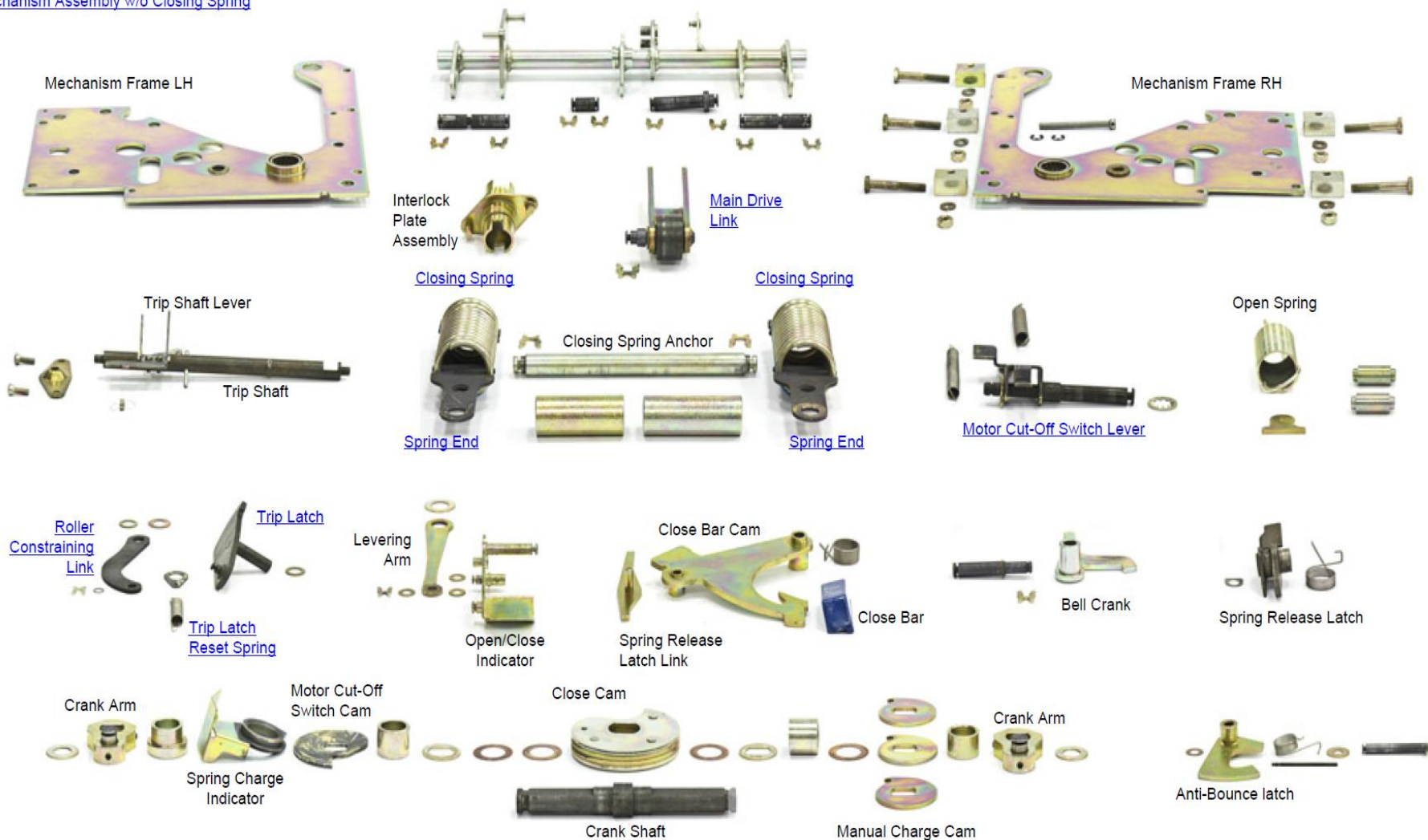
DS-416 Exploded View - Frame Components

[Westinghouse DS-416](#)



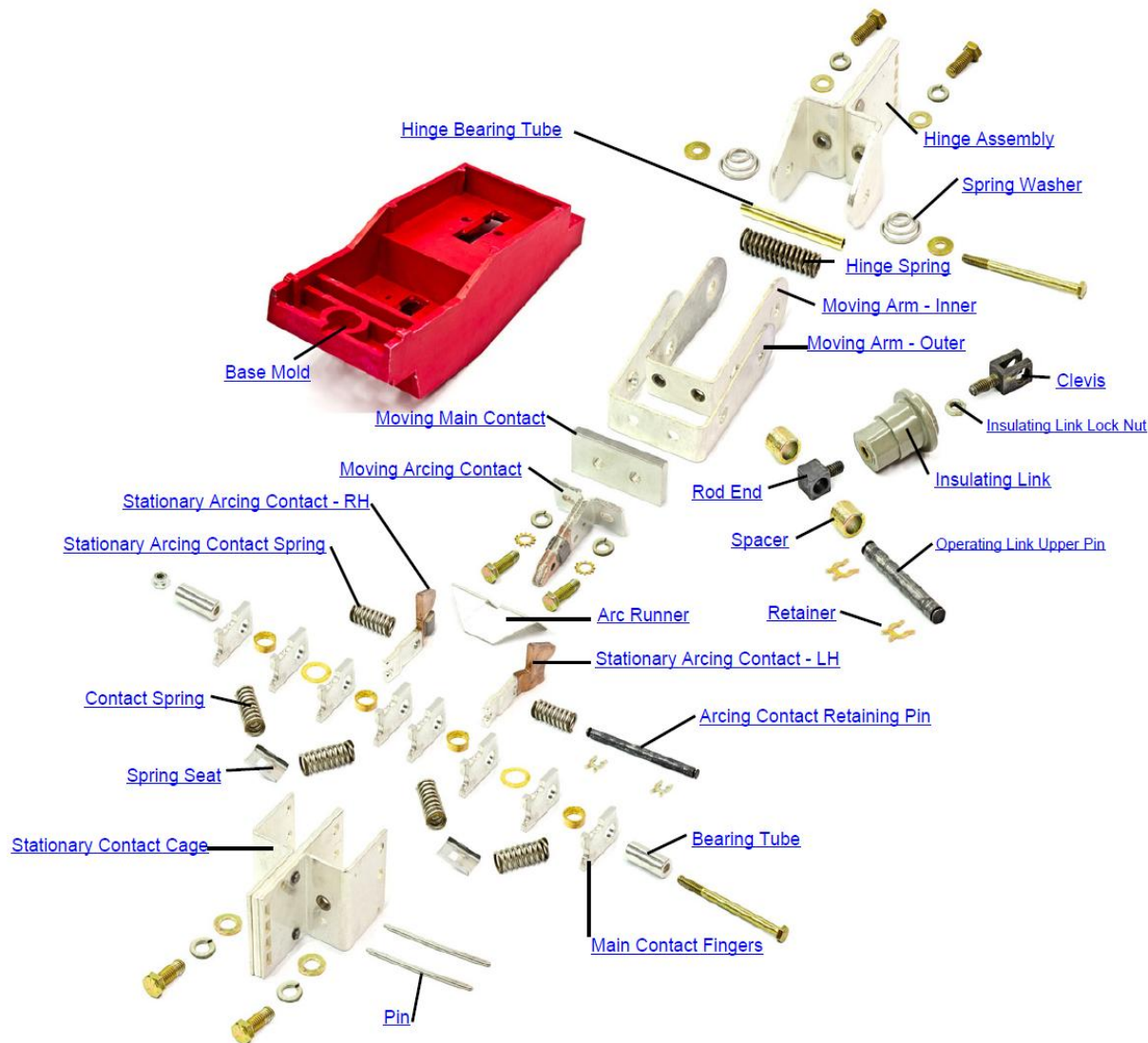
DS-416 Exploded View - Mechanism Components

[Mechanism Assembly w/o Closing Spring](#)

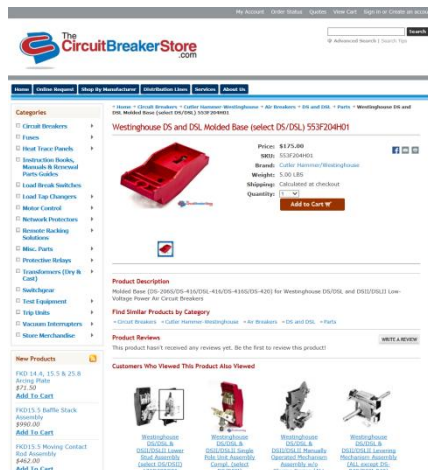


DS-416 Exploded View - Racking Mechanism Components

[Single Pole Unit Assembly](#)



Once your part need is identified, all you have to do is point and click with your mouse and you can purchase the part 24/7 though our on-line store.



→ [Home](#) → [Circuit Breakers](#) → [Cutler Hammer-Westinghouse](#) → [Air Breakers](#) → [DS and DSL](#) → [Parts](#) → [Westinghouse DS and DSL Molded Base \(select DS/DSL\) 553F204H01](#)

Westinghouse DS and DSL Molded Base (select DS/DSL) 553F204H01



Price: \$175.00
SKU: 553F204H01
Brand: Cutler Hammer/Westinghouse
Weight: 5.00 LBS
Shipping: Calculated at checkout
Quantity:

Product Description:
Molded Base (DS-200/DS-430/DSL-430/DSL-430S/DSL-430S) for Westinghouse DS/DSL and DSL/DSL2 Low-Voltage Air Breaker for Circuit Breakers

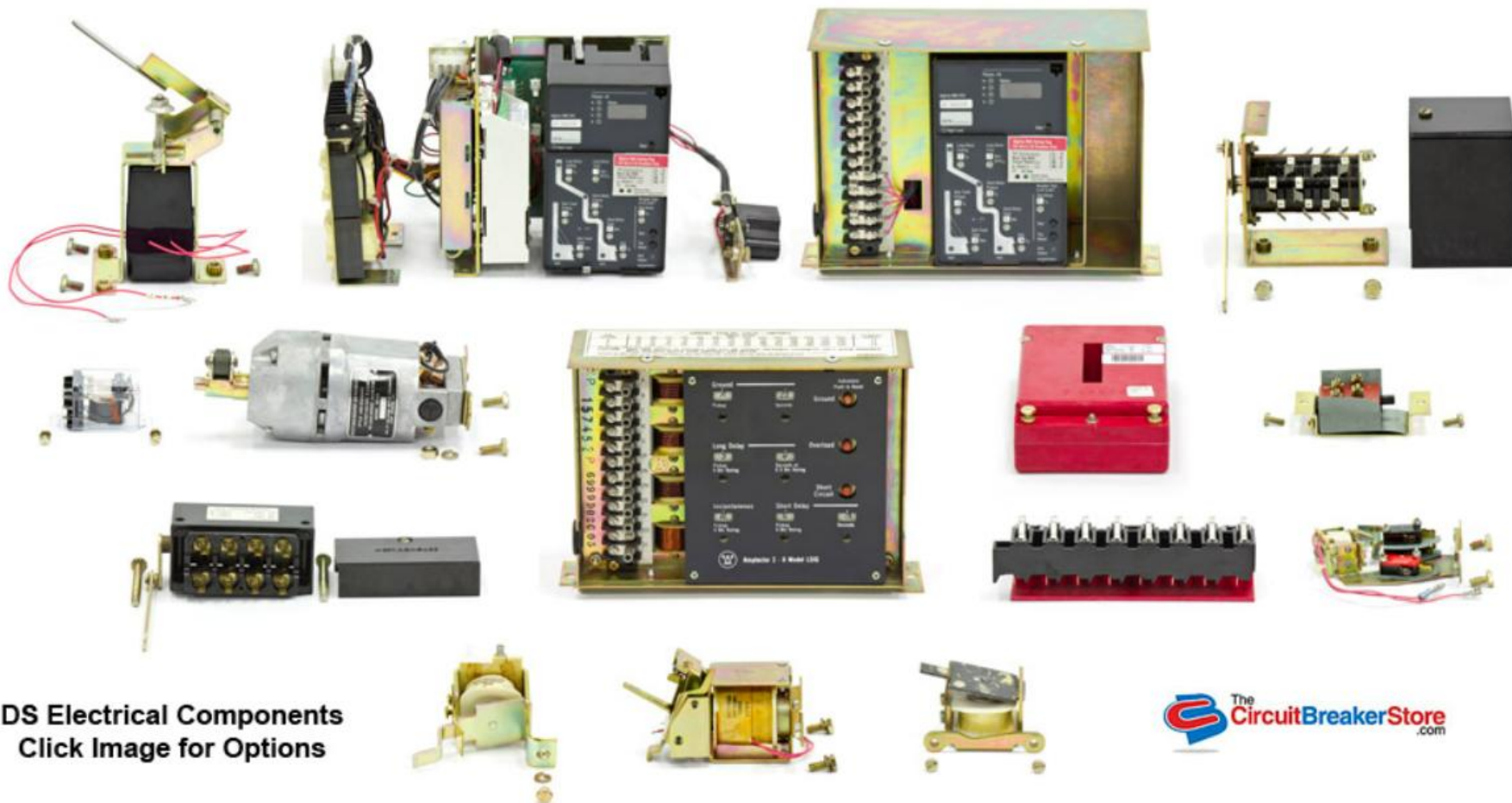
Find Similar Products by Category:
→ Circuit Breakers → Cutler Hammer-Westinghouse → Air Breakers → DS and DSL → Parts

Product Reviews:
This product hasn't received any reviews yet. Be the first to review this product!

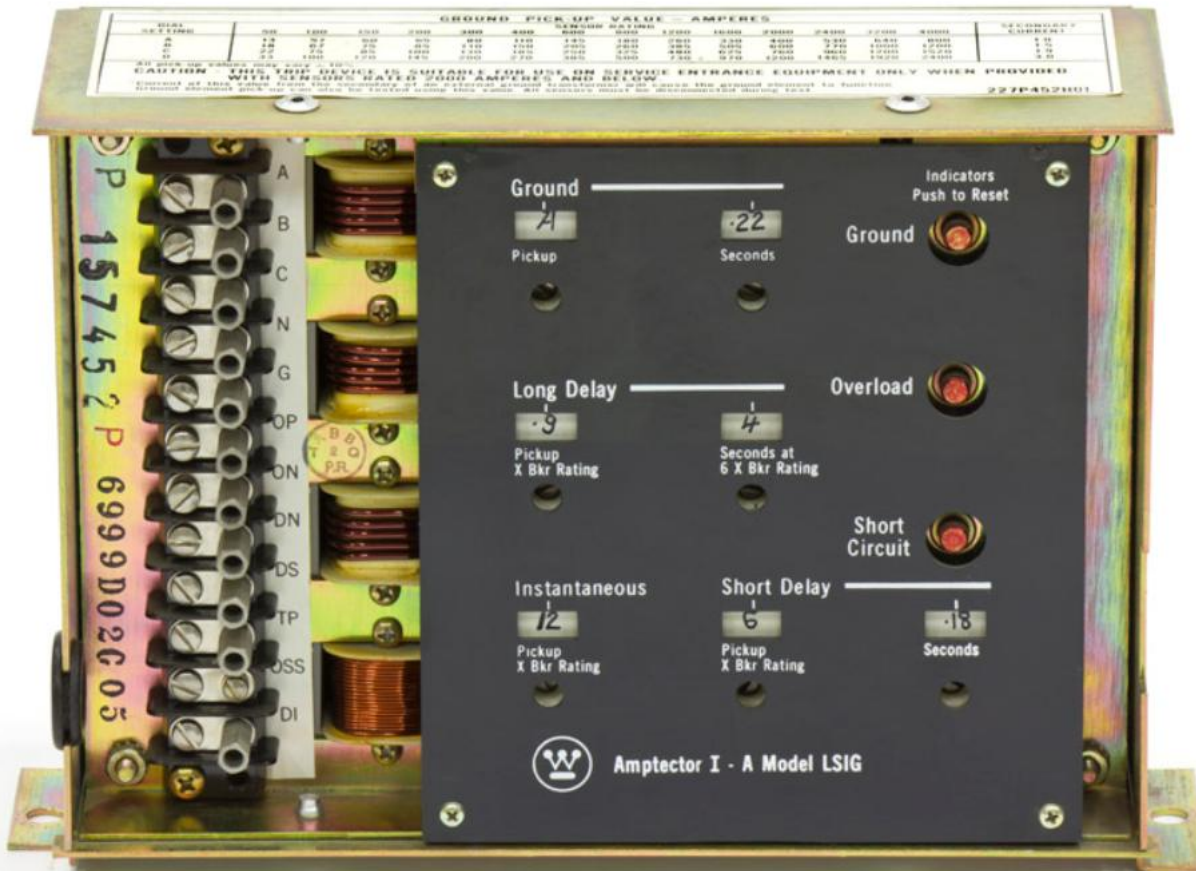
Customers Who Viewed This Product Also Viewed:

Product Name	Price
Westinghouse DS/DSL-430/DSL-430S/DSL-430S Molded Base (select DS/DSL) 553F204H01	\$175.00
Westinghouse DS/DSL-430/DSL-430S/DSL-430S Molded Base (select DS/DSL) 553F204H01	\$175.00
Westinghouse DS/DSL-430/DSL-430S/DSL-430S Molded Base (select DS/DSL) 553F204H01	\$175.00
Westinghouse DS/DSL-430/DSL-430S/DSL-430S Molded Base (select DS/DSL) 553F204H01	\$175.00

All B2B partners will receive discounted pricing relative to those displayed on the normal B2C internet pricing. With this process, we can protect our service and testing friends from their customer just finding us direct.



DS Electrical Components
Click Image for Options



8. Amptector I-A

Model	Style - 60 Hz
LI	6998D02G01
LIG	6998D02G02
LS	6998D02G03
LSG	6998D02G04
LSIG	6998D02G05
LSI	6998D02G06

Amptector II-A

Model	Style - 60 Hz
DU	6997D20G41
SE	6997D20G42
TR	6997D20G43

All equipment is fully tested prior to shipment.

Our test equipment is state of the art and far exceeds the minimum specifications needed for our type of work.

Annually, Electrical Test Instruments of Maryland spends an entire week at our facility calibrating every piece of equipment we have (even stuff we do not normally use or which is backup).

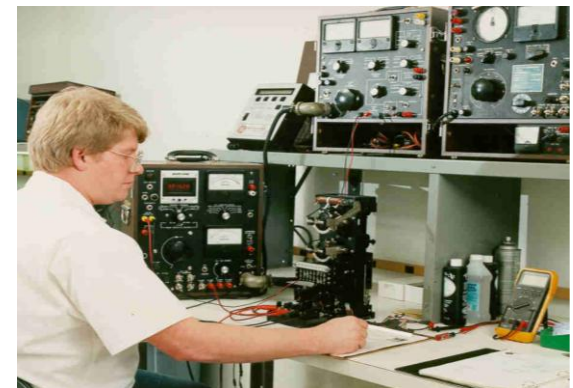
Calibration records, along with a copy of all test reports are keep on file forever.



ETI's New Digital Control Head for MultiAmp 8160's & BTS-500 Primary Injection Test Sets



A Seminar on Partial Discharge Testing
Group CBS was one of first to adopt this technology.



All relays and other components are thoroughly tested prior to shipment. Test results are included in the box.

CIRCUIT BREAKER SALES CO., INC.		LOW VOLTAGE CIRCUIT BREAKER TEST REPORT		1315 Columbia St., P.O. Box 1008 Gainesville, TX 76240-1008 Phone 940-665-4444 Fax 940-665-8971 www.circuitbreaker.com	
JOB ORDER #:		CUSTOMER:		DATE:	
TEST LOCATION:					
BREAKER NAMEPLATE DATA		TRIP DATA		SETTINGS	
MANUFACTURER:		TYPE: <input type="checkbox"/> SOLID STATE <input type="checkbox"/> SERIES TRIP		PICKUP BAND	
MODEL:		MANUFACTURE:		LONG TIME:	
FRAME:		MODEL:		SHORT TIME:	
VOLTS: _____ AMPS: _____		C.T. RATING:		INSTANT:	
OPERATOR: <input type="checkbox"/> Manually Operated <input type="checkbox"/> Electrically Operated <input type="checkbox"/> Manually/Electrically		RATING PLUG:		USED PAGE:	
MOUNT: <input type="checkbox"/> Draw Out <input type="checkbox"/> Bolt in <input type="checkbox"/> Clip in		SERIAL #:		CONTROL VOLTAGE	
SERIAL #:		PRIMARY FUSES:		N. _____ Y. _____	
				CLOSE: _____ TRIP: _____	
				MOTOR: _____ UV: _____	
1-HIGH CURRENT TEST					
FUNCTION	SUPPLY	TEST AMPS	CURVE SPECS	PHASE A	PHASE B
LONG TIME				Seconds	Seconds
SHORT TIME				Seconds	Seconds
INSTANTANEOUS				Amps	Amps
GROUND FAULT				Seconds	Seconds
2-CONTACT RESISTANCE (DUCTOR)			3-INSULATION RESISTANCE (MEGGER)		
PHASE A	PHASE B	PHASE C	BREAKER OPEN (Megohms)		BREAKER CLOSED (Megohms)
Line-Line Phase "A"	Line-Line Phase "B"	Line-Line Phase "C"	Phase "A" to ground	Phase "B" to ground	Phase "C" to ground
4-Min. TRIP Volts	5-Min. CLOSE Volts				
<input type="checkbox"/> Megger Control Wiring <input type="checkbox"/> Nameplate <input type="checkbox"/> Antisump Function <input type="checkbox"/> Indicating stickers <input type="checkbox"/> Auxiliary switches <input type="checkbox"/> Mechanical Interlocks <input type="checkbox"/> Operation Counter <input type="checkbox"/> Trip Free <input type="checkbox"/> Test sticker <input type="checkbox"/> Bell Alarm/OTS <input type="checkbox"/> Blown Fuse Indicator <input type="checkbox"/> Documentation					
Tested by: _____ Comments: _____					





**ON BEHALF OF EVERYONE AT CIRCUIT BREAKER SALES
WE THANK YOU FOR YOUR TIME AND CONSIDERATION.**

THE CBS FAMILY



Solving Electrical Problems Worldwide

ComRent

Options for Interconnection Testing

- Increasingly, states are requiring witness tests for any new distributed energy source upon initial connection
 - Places burden on utility engineers
- ComRent offers the Cx Monitor to capture data during an interconnection witness test
 - Testing is compliant to UL1741 and IEEE 1547.1 reporting formats



Options for Interconnection Testing

- Successfully conducted for Major Interstate Utility
 - December 2013



Doble Engineering Company



Doble's Portable Tools for Oil, Protection and PD Testing

Marc Burke
Doble Engineering Company

The Doble Delphi Portable Analyzer



- Portable dissolved gas analysis device
- Check condition of power transformers and other oil-filled equipment
- Quickly sample & analyze oil on-site
- Provides timely information on key dissolved gases in insulating oil



The Doble F6052 Universal Time Synchronizer



- Portable time source for areas restricted by space, distance and security
- When you need a time reference or time stamp, but cannot access reliable time sources or GPS signals
 - Applications: End-to-end, Phasor measurement units, IEC 61850 compliant testing
 - Locations: Hydro-electric or nuclear facilities, areas with tall buildings, test vaults or locations with line of sight restrictions



Doble DFA300 Surveyor



- A handheld, in-service partial discharge testing tool
- Uses both RFI and acoustic technology
- It can be used in many different substation applications
 - Gas insulated switchgear (GIS), open air substations, instrument transformers, power transformers & cable terminations



2014
POWERTEST
CONFERENCE

NETA

ECP



ECP

ECP TracerSM

Equipment Coordination Professionals, LLC

ECP TracerSM

- Do you find yourself looking for that 3 phase relay test set, power factor unit, VLF or power analyzer and wondering why you're renting another one when you already own five?
- Are you familiar with the power of new tracking technologies?

Equipment coordination challenges are something every service firm faces. Let ECP TracerSM help you track your high value assets and maximize their utilization to save you time and money!

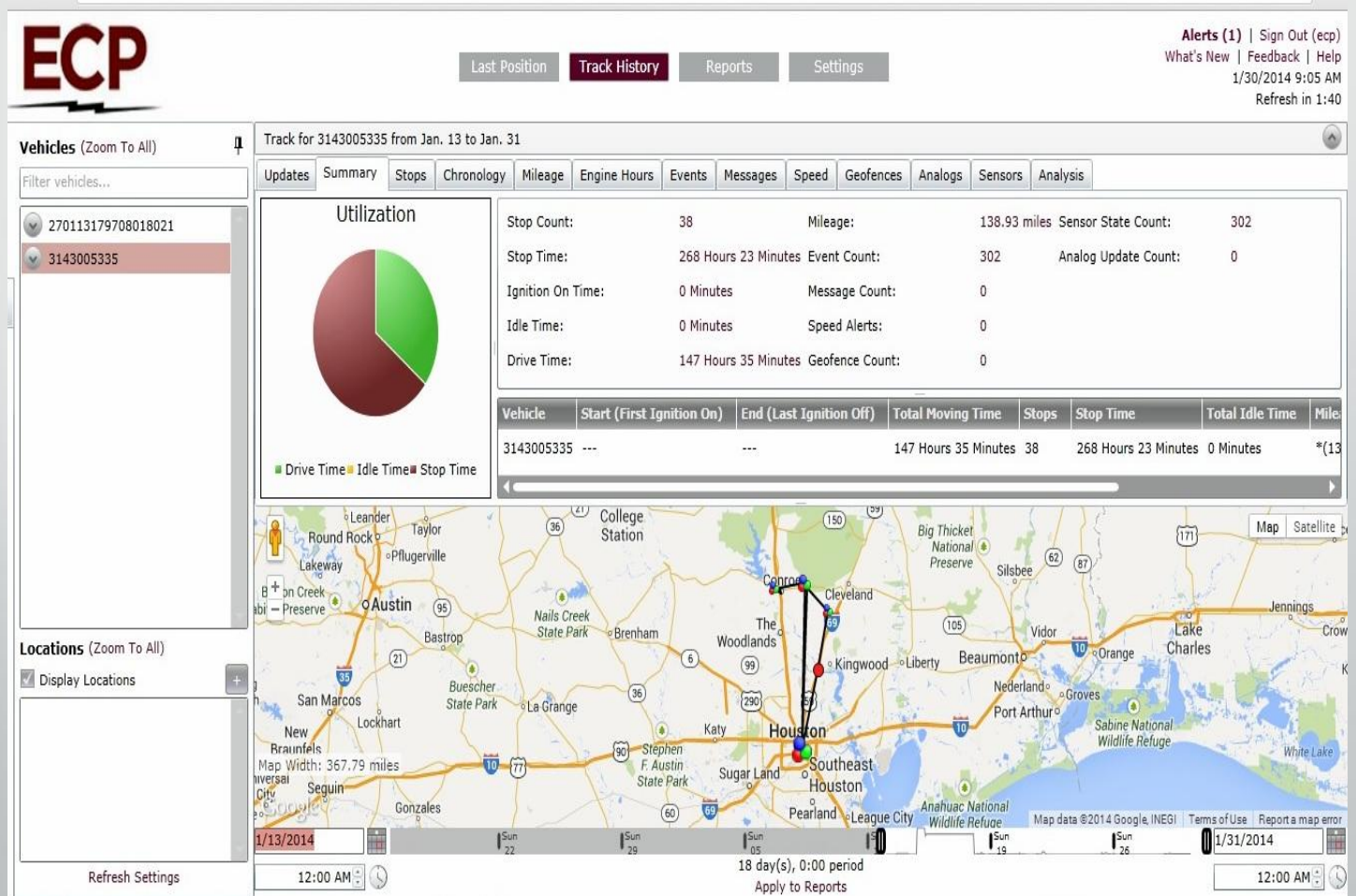


ECP TracerSM

Where is my equipment?

What is available right now?

What is my utilization of this asset?



ECP TracerSM

Save:

- leases that were never needed
- insurance costs
- shipping costs
- time spent locating assets
- lost revenue from idle equipment
- buying more equipment than you need
- recovery of lost or stolen assets

***Visit Booth #819 to learn about
the benefits you can gain from
our innovative Equipment
Coordination Program***

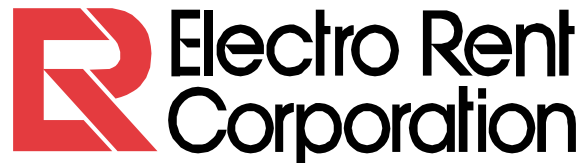


Electro Rent Global

PowerTest 2014

Electro Rent

New Products



Camlin Power First Trip Unit for Circuit Breakers- Daily, Monthly Rentals

CML-PROFILEP3



- Total trip time (relay and circuit breaker)
- Overlay of 4 Trip Coil Overlays
- Offline mode for main contact times when isolated

Omicron 256Plus- Precision Relay Test Set- Daily, Weekly, Monthly Rental

OMI-256PLUS/P1



- High accuracy versus the CMC 356
- High accuracy for energy meters of class 0.2 and measuring transducers
- Good for R&D, production and type testing

Baker Impulse Motor Tester

BAI-PP40 Power Pack



- Used with DX12 or DX12HO
- Static (offline testing)
- Thyatron tube that generates high peak current needed to test low impedance windings of large motors and coils

DILO SF6 Moisture Measuring Device

DILO-3-037-R002



- Determines moisture content in SF6 by calculating dewpoint
- Takes very small sample and releases through back of unit
- 10 in. by 8 in. 6.2 lb.

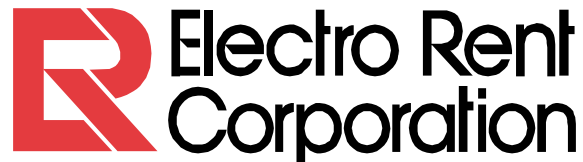
Electro Rent Contact Information

Booth # 311

1-800-688-1111 (USA)

sales@electrorent.com

1-800-268-0216 (Canada)



Electroswitch

Arc Flash Time Delay CSR

By ELECTROSWITCH

Arc Flash Time Delay CSR

How are you handling
Arc Flash issues
with your
metal-clad switchgear?

Arc Flash Time Delay CSR

Are you using a full body suit (PPE)?



Arc Flash Time Delay CSR

Do you use hot sticks?

Or

Maybe a “Chicken Switch”?

Arc Flash Time Delay CSR

Introducing the

**Time-Delay
Control Switch Relay.**

Arc Flash Time Delay CSR

The **TIME DELAY CONTROL SWITCH RELAY:**

Has a built-in time delay of 10 seconds before the switch will Trip or Close

Arc Flash Time Delay CSR

The **TIME DELAY CONTROL SWITCH RELAY:**

How does it work?

Arc Flash Time Delay CSR

The **TIME DELAY CONTROL SWITCH RELAY:**

Looks just like a
standard BC or CSR

Except for the
Two White Buttons



Arc Flash Time Delay CSR

The **TIME DELAY CONTROL SWITCH RELAY:**

To Safely Trip the
Breaker Locally:

Just Depress the
Delay/Trip button
for 4 Seconds



Arc Flash Time Delay CSR

The **TIME DELAY CONTROL SWITCH RELAY:**

Looks just like a
standard BC or CSR
Except for the
Two White Buttons



Arc Flash Time Delay CSR

The **TIME DELAY CONTROL SWITCH RELAY:**

The Green LED begins to flash signaling that the timed Trip Sequence has been initiated.



Arc Flash Time Delay CSR

The **TIME DELAY CONTROL SWITCH RELAY:**

The Green LED blinks faster as the seconds count down to the Delayed Trip



Arc Flash Time Delay CSR

The **TIME DELAY CONTROL SWITCH RELAY:**

The handle then moves to Trip while your personnel are safely outside the Arc Flash Zone



Arc Flash Time Delay CSR

The **TIME DELAY CONTROL SWITCH RELAY:**

To close locally repeat
same steps except using
DELAY/CLOSE button



Arc Flash Time Delay CSR

The **TIME DELAY CONTROL SWITCH RELAY:**

Eliminates the possibility of Mis-operation.

Provides remote control via SCADA.

Fits into existing mounting.

No special wiring required.

Arc Flash Time Delay CSR

10 Second Time Delay.

Simple Push Button Interface.

Operation Easily Cancelled by Pushing
Opposite Button.

Standard Voltages are Available

Arc Flash Time Delay CSR

New Options

24 VDC,

125 VDC/120VAC,

250 VDC/240 VAC

Safety Inter-locks (Turn to Latch)
(Push/Pull)

Other delay times are available

Arc Flash Time Delay CSR

Stop by Booth 401

FLIR Systems



GE Energy- Industrial Solutions

GE Industrial Solutions Aftermarket Solutions

GE NEW PRODUCT / TECHNOLOGY PRESENTATION



Hosted By NETA
March 3-6, 2014
Hyatt Regency, Denver, Colorado



imagination at work

By: Joe Rushin

GE

Industrial Solutions

Aftermarket Solutions



Introducing **ArcWatch™** ... a technology that is imbedded in specific LV specific low voltage GE trip units and breakers that allow the breakers to be set for better arc flash protection without sacrificing selective coordination.

- How does Arcwatch comply with 2014 NEC article 240.87/NFPA 70E
- Circuit breakers can be set for better arc flash protection without sacrificing selective coordination.
- Gear included LV switchgear, switch boards and panel boards
New equipment and retrofit opportunities.
- For more information about **ArcWatch™** , visit our hospitality suite in the “Mineral D” room or our booth #111 .

Grace Engineered Products, Inc.

**Keeping people away from
the hazards of Voltage.**



Permanent Electrical Safety Devices



Optical Cable Voltage Indicator

Zero Voltage Thru-Door Indicator

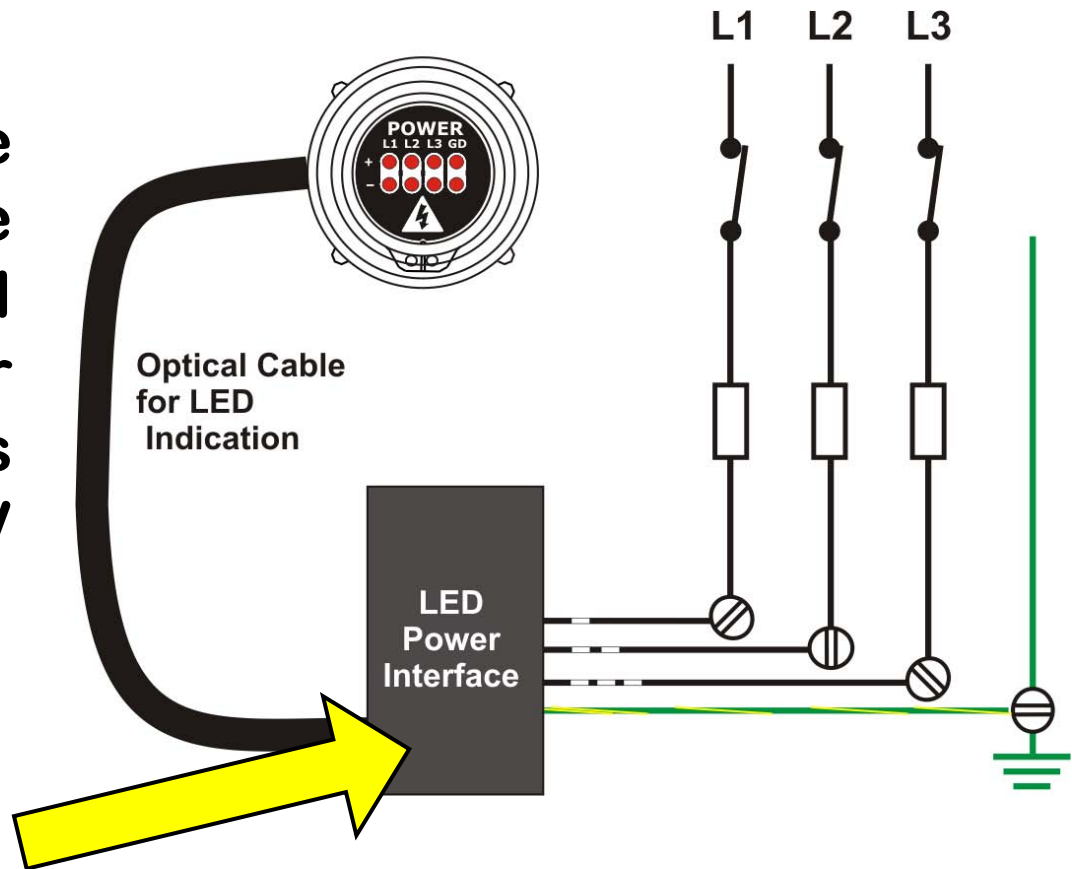
- Long life LED's
- 20-600VAC / 20-1000VDC (non-UL Max 750VAC)
- CAT III/IV Electrical Rating (pending)
- UL Type 4X, 12, 13
- Potted Construction with 6' Leads
- Optical Cable Length up to 72"



Optical Cable Voltage Indicator

Zero-voltage device
meets Low Voltage
Switchgear ANSI
C37.20.1 (7.1.3.7) for
panel mount devices
less than 254V

Same circuit as
existing SafeSide®
voltage indicator
(R-3W, R-3W SR, R-3W2)



PESDs: Medium Voltage Indicator

R-1VL003 / R-1VH003

- Long life LED's
- 2-15KV, 15-43KV
- 3 to a set
- Capacitive coupling to ground
- Bolts on the bus
- Adjustable for pointing to viewing window



HAEFELY HIPOTRONICS



2293

Automatic Transformer Winding Analyzer



2293 Automatic Transformer Winding Analyzer

The 2293 is an automatic winding analyzer, optimized for three phase power and distribution transformers.

Includes:

- ✓ Winding resistance measurement.
- ✓ Core demagnetization.
- ✓ Cooling curve resistance measurement
- ✓ Transformer type detection (optional)
- ✓ Turns ratio measurement (optional).

NEW
NEW



Resistance



Cooling Curve



Detection



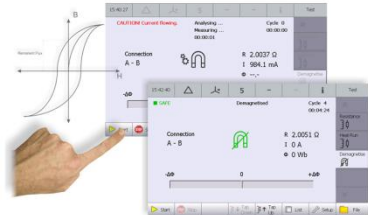
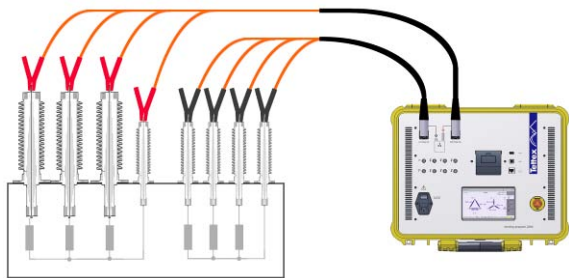
Demag.



Turns Ratio

2293 Additional Features

- One time connection system, and unique simultaneous winding magnetization method (SWM).
- Touch screen interface with full graphical visualization
- Tap changer control signal
- Multiple temperature channels with automatic correction
- On-board printer
- Data transfer via USB





2293 Scope of supply

Winding resistance measuring unit with cable set (10m),
carrying bag, test certificate, user manual



Options

2293/TTR Turns ratio and transformer type detection add on

Accessories

2293/TEMP1 Temperature probe for liquids

2293/TEMP2 Magnetic temperature probe for metallic test objects

2293/TAP Tap changer connection cable

2293/10 10m extension cables (for high voltage and low voltage)





2293 Main applications

■ Power and distribution transformer manufacturers.

- ✓ Factory test
- ✓ Quality assurance

■ Utilities and service companies

- ✓ Acceptance
- ✓ Periodic maintenance on substations
- ✓ Fault detection

■ Rotating machine manufacturers

- ✓ Factory test
- ✓ Quality assurance

■ Repair shops

- ✓ Fault detection
- ✓ Repair



Contact HAEFELY HIPOTRONICS today!



- 

Resistance



Cooling Curve



Detection



Demag.



Turns Ratio

Europe

Haefely Test AG

Birsstrasse 300

4052 Basel

Switzerland

+ 41 61 373 4111

+ 41 61 373 4912

sales@haefely.com

China

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+ 86 10 8578 9908

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1650 Route 22 N

Brewster, NY 10509

United States

+ 1 845 279 8091

+ 1 845 279 2467

sales@hipotronics.com

2014
POWERTEST
CONFERENCE

NETA

inoLECT, LLC.



Innovation in electric power.

Portable Remote Racking

inO RAC2-P™

Arc Flash

- A dangerous condition associated with the release of energy caused by an electric arcing fault.
- Can produce temperatures up to 35,000 degrees F
- Generates harmful and fatal sound levels, light flashes & intense pressures, capable of killing a human.



**AT LEAST ONE
DEATH
— IS ATTRIBUTED TO —
ARC FLASH
EVERY
DAY**



- Everyday in the US, at least 5 – 10 Arc Flash incidents occur.
- Electrical explosions are responsible for an average of 320 deaths and over 4,000 injuries in the US alone, each year for the past decade. (US Bureau of Statistics)
- To be in Compliance with the Hazard Assessment & Equipment OSHA standard & NFPA 70E, companies **MUST** conduct hazard assessment and utilize appropriate PPE.

Remote Racking

- You can eliminate exposure to Arc Flash for your employees by implementing an Electrical Safety Program that includes Remote Racking – and allowing your personnel to operate circuit breakers from over 75 ft. away, well outside of the Arc Flash Boundary.



Remote Racking Saves Lives!

Safe for Equipment & Personnel

- Remotely operated from over 75 feet away.
- Consistent monitoring of torque/position to protect against breaker damage

User Friendly

- Operators no longer must wear bulky arc suits
- Design allows for ease of mobility
- Breaker Profiling for quick setup and operation
- High-definition color touchscreen panel with step-by-step instructions
- Portable Cases for use with multiple substations

Efficient

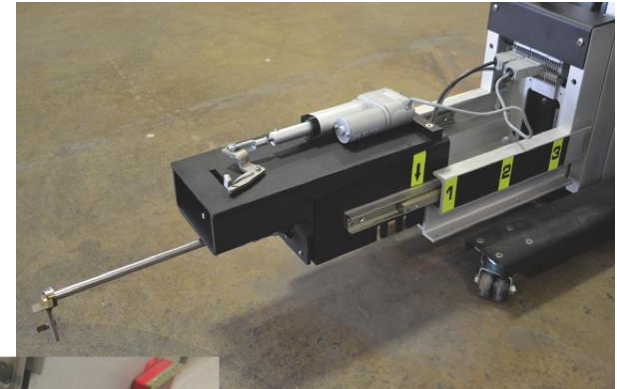
- Same unit operates all major manufacturers LV & MV breakers
- Unit racks breakers quicker & more efficiently than by hand

Key Features



Accessories

- ITE HK Actuator
- GE Magnablast Cell Actuator
- Manual Breaker Charge to Close
- Stair Climber Rails
- Cover
- Lifting Eyes
- Tow Carriage
- Control Switch Operator
- Remote Pushbutton Control
- GE AK Extractor (in development)
- Westinghouse DB Extractor
- Allis Chalmers MA Extractor
- **MANY MORE IN DEVELOPMENT!**





**inoLECT provides on-site commissioning
and training for your operators.**

- Electric Power, System Safety and Reliability Specialists
- Three Business Units
 - Engineering
 - Field Service
 - Manufactured Products
- Founded: 1998
- Over 350 Years combined Consulting, Field Service and Power System Engineering experience.
- MISSION: To provide superior power system solutions with exemplary customer service.



in**LECT**

Innovation in electric power.

Iris Power- Qualitrol



New Endwinding Vibration Accelerometer

March 3, 2014

Vicki Warren

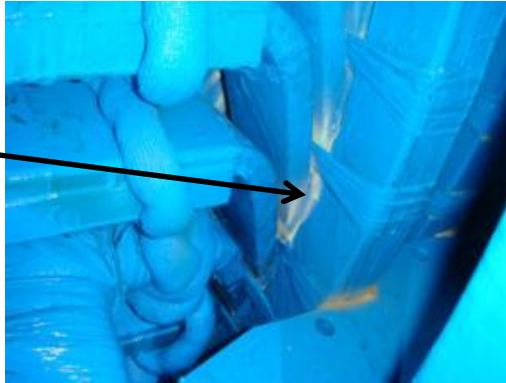
vwarren@qualitrolcorp.com

Iris Power – Qualitrol Corp

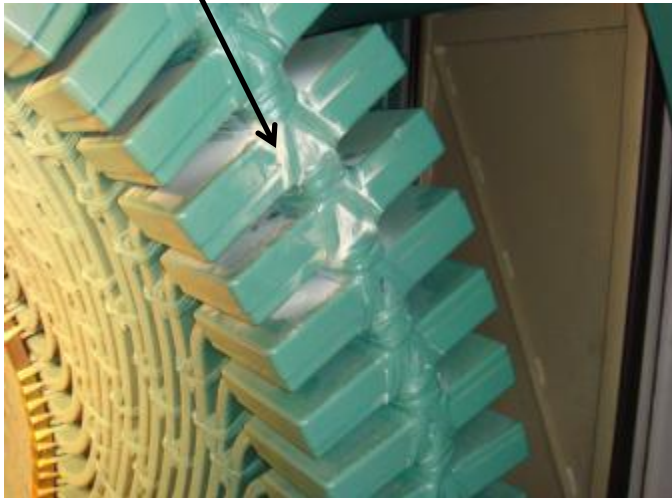
POWERTEST[®]

CONFERENCE

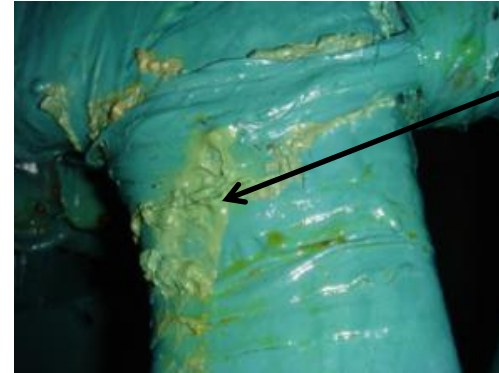
Insulation
fretting



Dusting



Insulation
Greasing



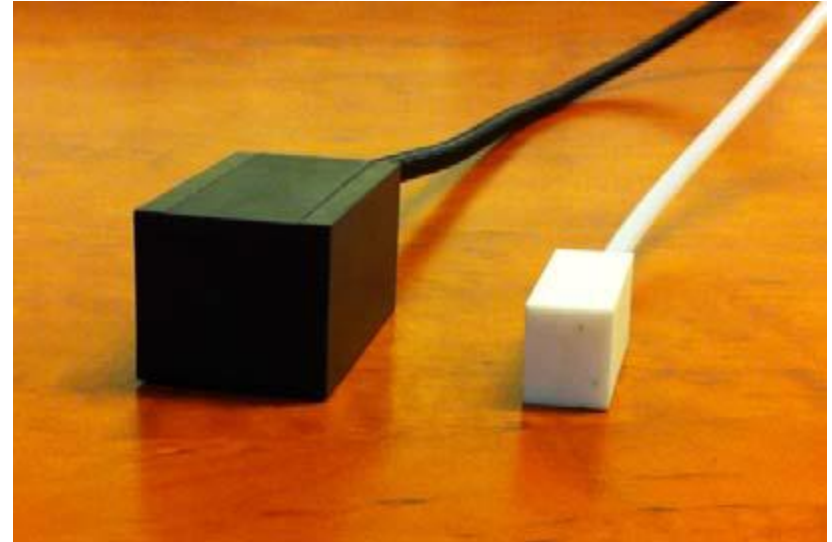
*Fatigue
cracks in
conductors*



POWERTEST[®]

CONFERENCE

- More flexibility
 - smaller sensor head size
 - 30x9x9 mm
- Easier installation
 - less fiber optic cables
 - 1 per axis
- Suitable for modern insulation systems
 - higher temperature rating
 - -50 to 230°C



IRISS, Inc.

IRISS[®]

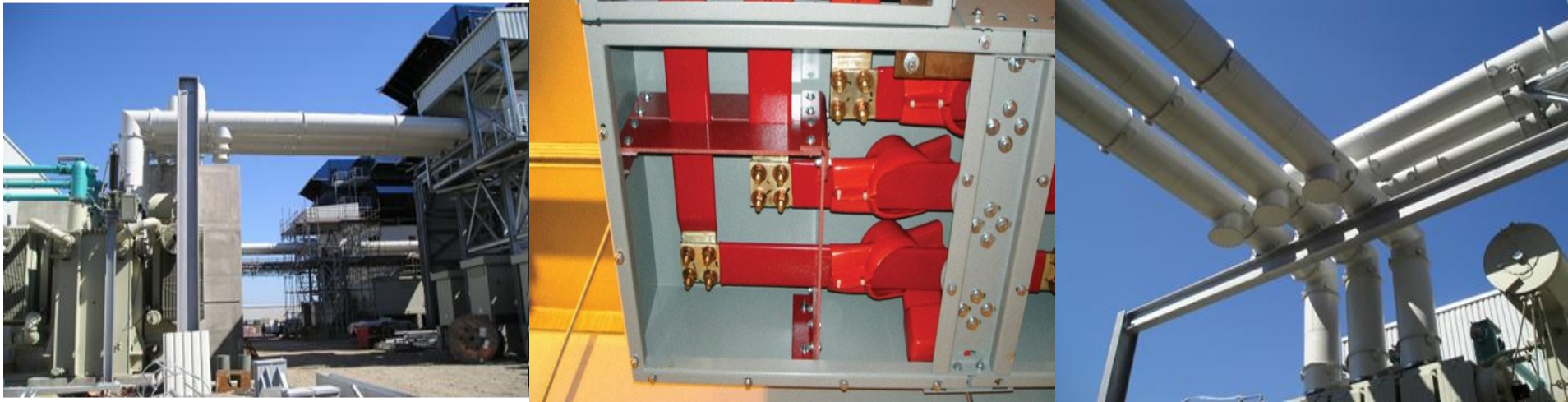
FLEXIR

EMSD[™]

Electrical Maintenance Safety Device

Isophase or Non Segmented Bus Bar Systems

These systems are the only critical components within the plant that usually have no redundancy and no quick replacement solutions.



How Do you Inspect IsoPhase or Non Segmented Bus Bar System?

FlexIR EMSD Systems



- Designed and built in line with our standard award winning CAP IR window product Lines.
- Carries all the same certifications as our CAP range
- Designed for IsoPhase and Non Insulated Bus Systems
- Offers IR Window Solutions Never thought possible
- FlexIR Window becomes Inspection and Maintenance access point to repair any faults and maintain the system
- Has optional ability of adding the Delta T Alert SHIELD System for continuous monitoring



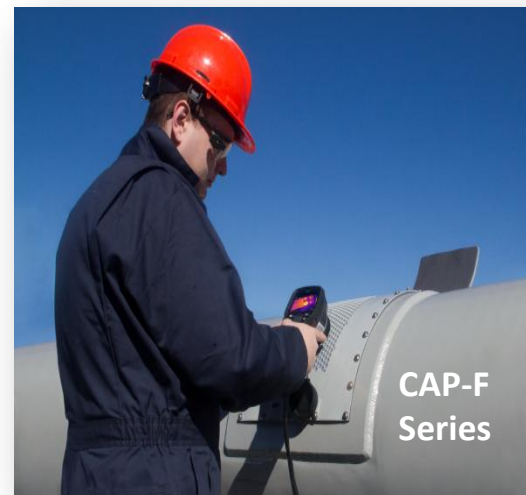
Non-Segmented Bus Bar IR Window Solution

- IR window system build and designed specifically for use in Non-Segmented Bus Bar systems
 - Custom sized to allow full visual and Infrared inspection of electrical connections within the Bus system
 - No need to cut into original covers as CAP-B is designed to replace covers for fast and efficient retrofit in the field.



Isophase Bus Bar IR Window Solution

- IR window system build and designed specifically for use in Isophase Bus Bar systems
 - Standard and custom sizes available to allow full visual and Infrared inspection of electrical connections within the Bus system
 - Built directly into replacement covers for fast and efficient retrofit in the field.
 - Window designed to be easily removed to allow maintenance of faulty connections.





What is Delta T Alert?



- The Delta T Alert™ is a self-contained, temperature-monitoring sensor that attaches magnetically to your electrical enclosure covers.
- The Delta T Alert™ is comprised of two sensors, one to monitor the electrical enclosure's interior temperature and the second to monitor the ambient temperature of the room where the enclosure is located
- Delta T can be configured to collect data on a daily basis, at specific time intervals, with the information transmitted wirelessly to an onsite computer for analysis and trending. The Delta T Alert™ will warn you of excessive temperature rise within your electrical enclosures well before more serious problems may occur.
- This software lets you print reports and trending graphs, as well as scheduled repair logs for maintenance purposes. There's never been an easier, more effective way to prevent costly electrical damage and system downtime. With the Delta T Alert™, you can monitor your electrical system quickly and daily, from a single location.

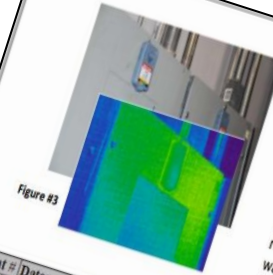
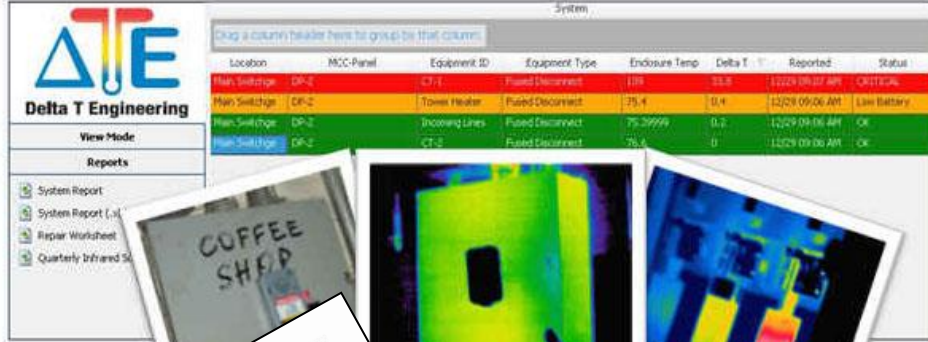


Figure #3

Thermography Results

The panel was scanned using a Mikron Model #7515 prior to cover removal. Thermography results show a warm panel cover. See Figure #3.

Identification of Problem - Once the panel cover was removed and the panel was scanned, thermography results show warm neutral wires. Presently this is a #3 priority and requires further investigation. See Figure #4.

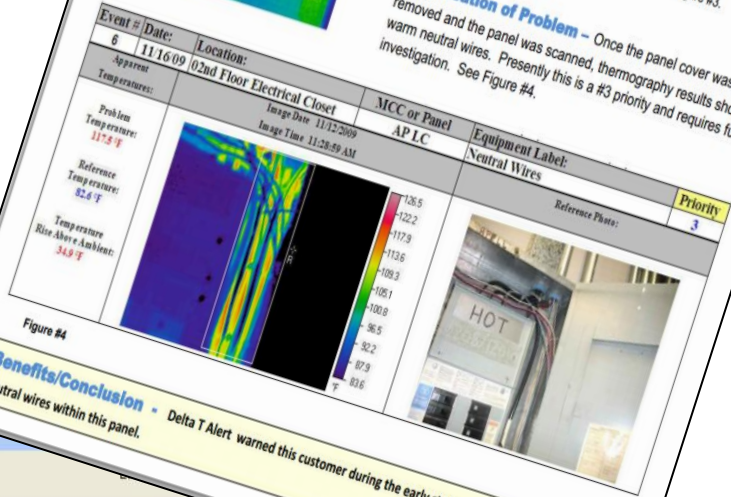


Figure #4

Benefits/Conclusion - Delta T Alert warned this customer during the early stages of a potential problem with neutral wires within this panel.

Thermography Results

Identification of Problem - Once the panel cover was removed and scanned, thermography results show phase "X" breaker hot connection on main breaker is hot. This is a #1 priority and requires further investigation to determine root cause of hot spot. See Figure #2

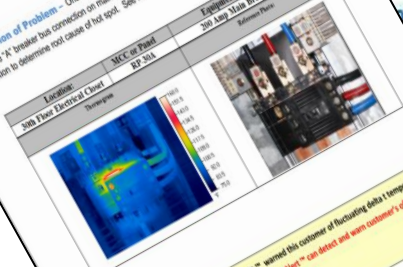


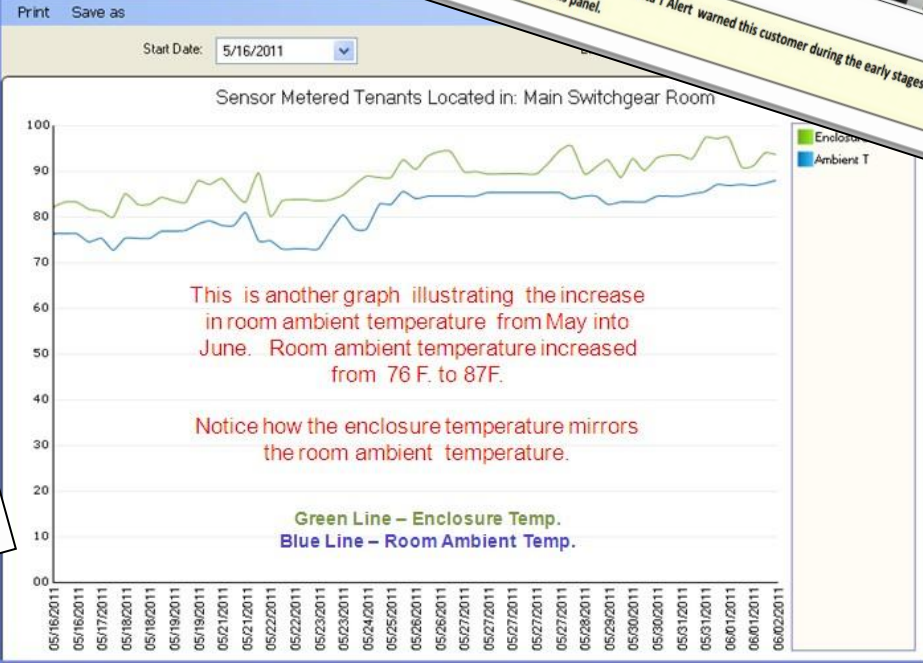
Figure #2

Benefits/Conclusion - Delta T Alert warned this customer of fluctuating Delta T temperatures within this panel. This is an excellent example of how Delta T Alert can detect and warn customer's of electrical anomalies within their facilities.

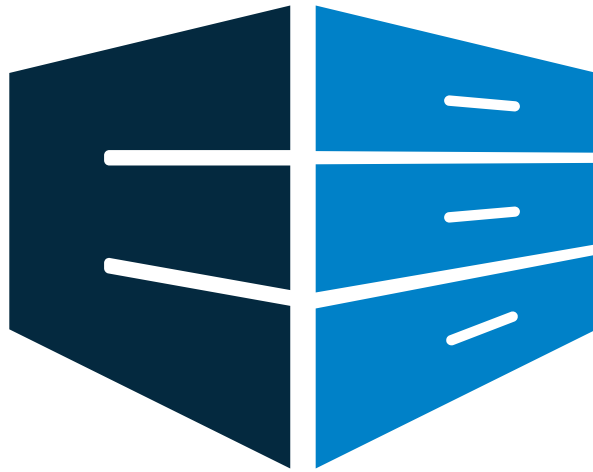


Delta T Alert identified this unbalanced Load

Ambient/Enclosure Trending Graph

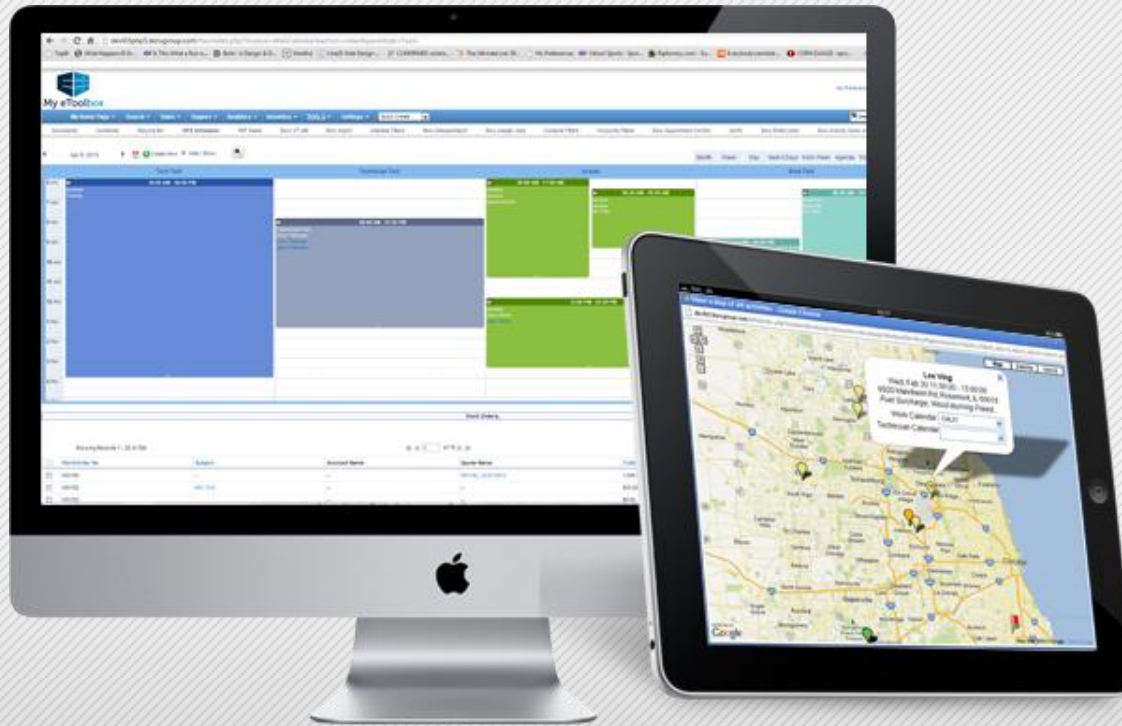


Jakob Marketing Partners



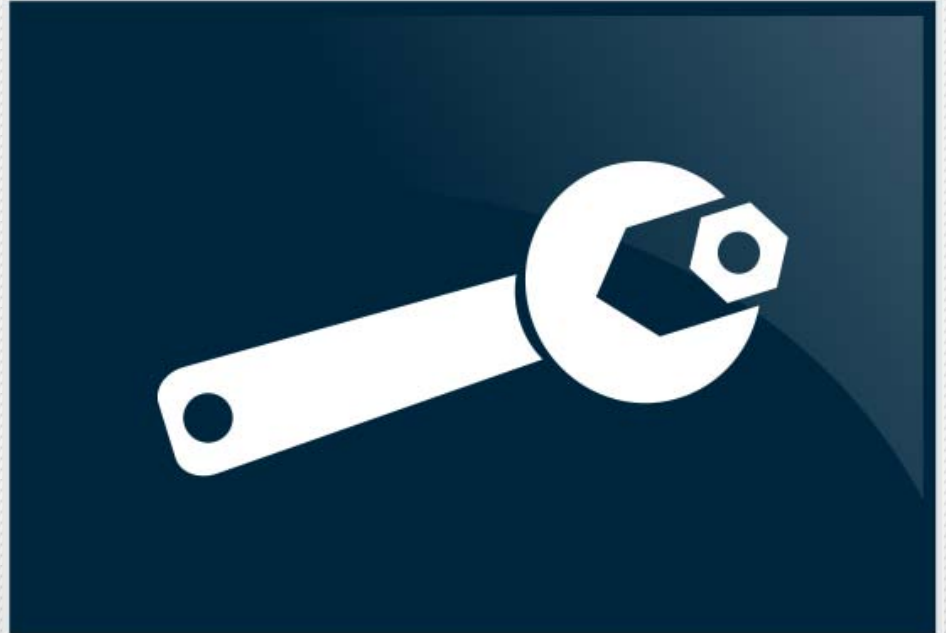
My eToolbox

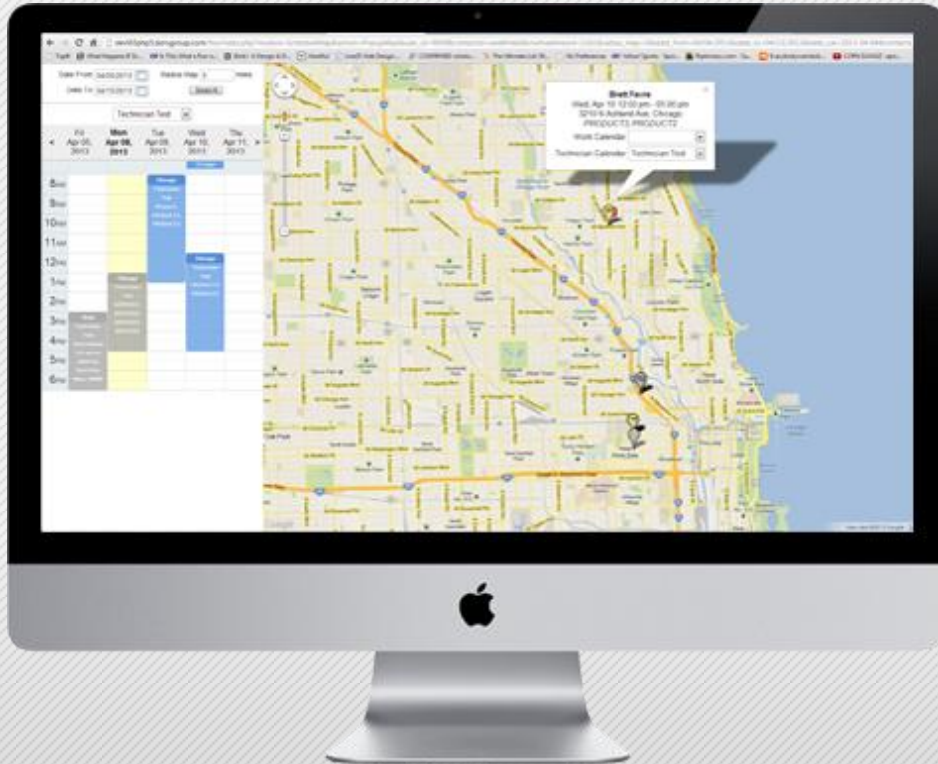
We have one tool
you need to add to
your toolbox...



TIGHTEN UP your scheduling

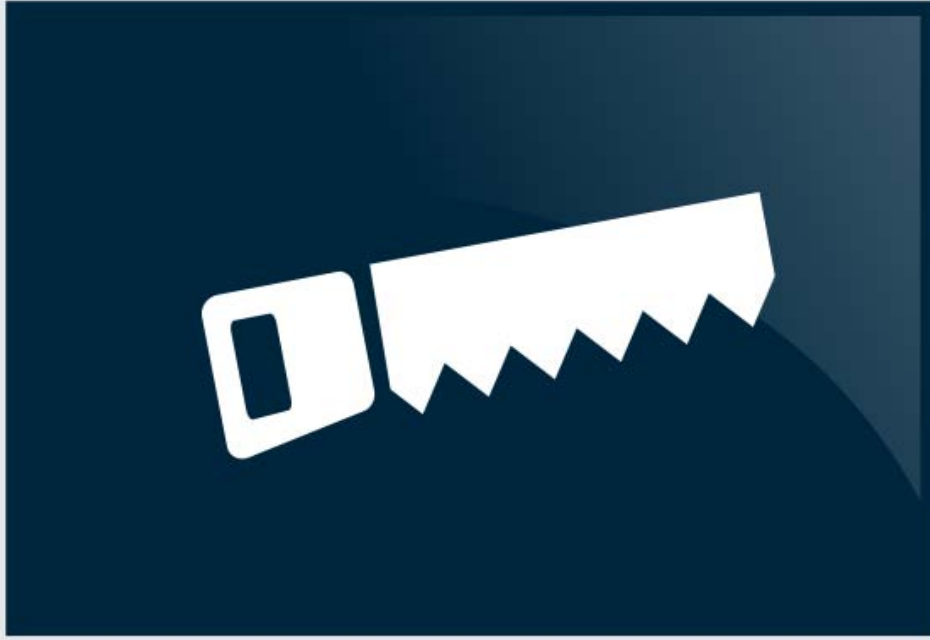
- ✦ Streamline Scheduling process
- ✦ Easily assign jobs
- ✦ Optimize routes





Scheduling & Dispatch

Save Time and Money with streamlined scheduling and My eToolbox.



CUT DOWN on costs

- ✦ Maximize Productivity
- ✦ Cut Travel Expenses
- ✦ Convert More Leads



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My eToolbox

Sales & Marketing

Leverage My eToolbox and maximize your investment in sales and marketing.



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My eToolbox



INCREASE Productivity

- ✦ Reduce Paperwork
- ✦ Streamline Invoicing
- ✦ Sync with Quickbooks

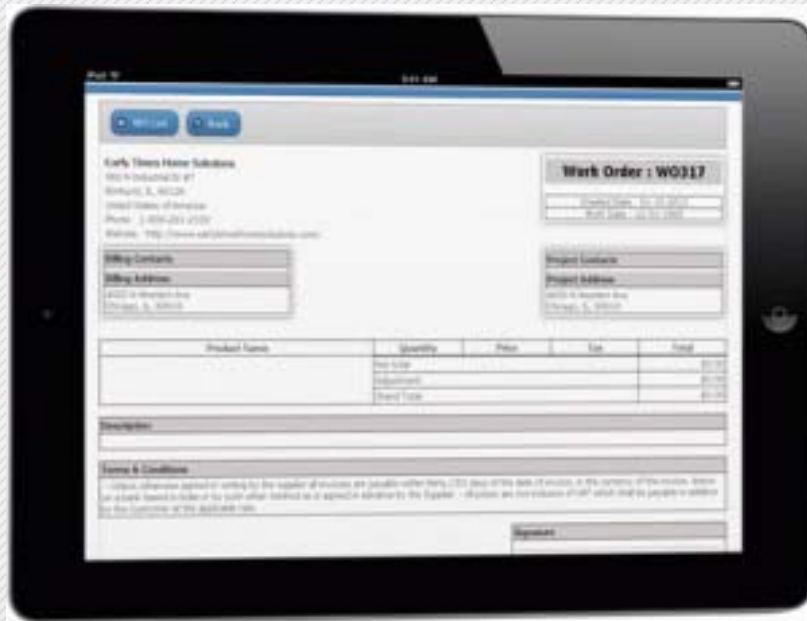


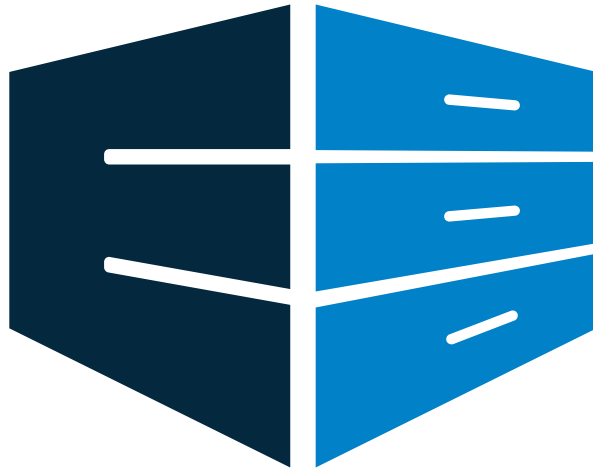
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My eToolbox

My eToolbox is a
complete solution for
your service business





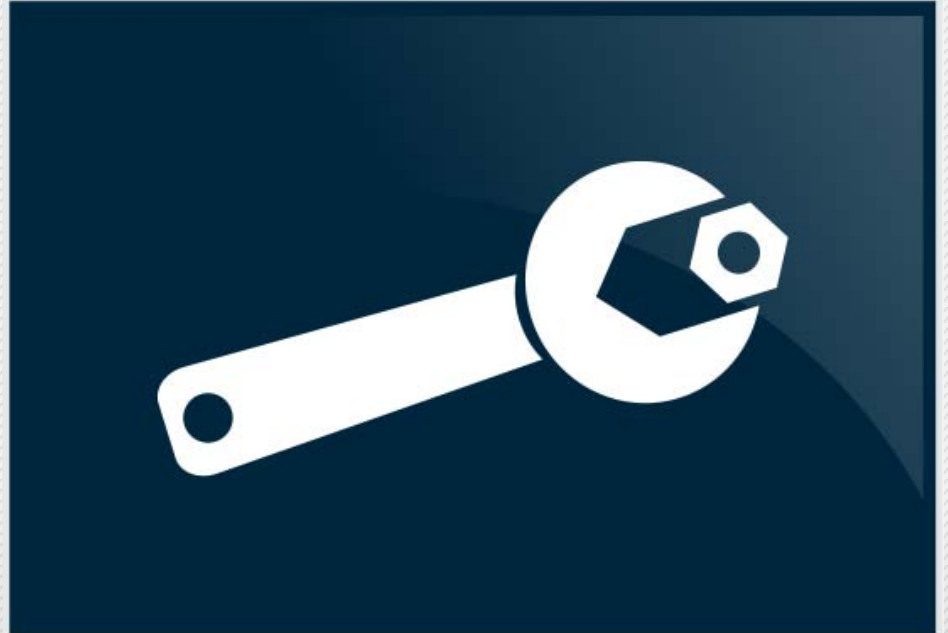
My eToolbox

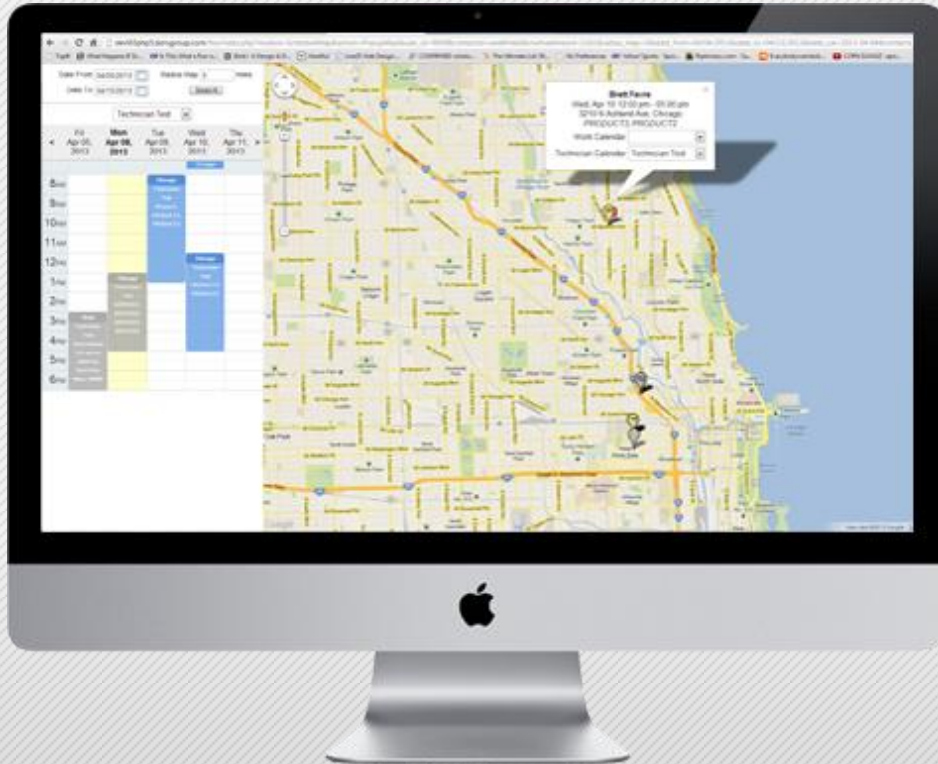
We have one tool
you need to add to
your toolbox...



TIGHTEN UP your scheduling

- ✦ Streamline Scheduling process
- ✦ Easily assign jobs
- ✦ Optimize routes





Scheduling & Dispatch

Save Time and Money with streamlined scheduling and My eToolbox.



CUT DOWN on costs

- ✦ Maximize Productivity
- ✦ Cut Travel Expenses
- ✦ Convert More Leads

Sales & Marketing

Leverage My eToolbox and maximize your investment in sales and marketing.



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My eToolbox



INCREASE Productivity

- ✦ Reduce Paperwork
- ✦ Streamline Invoicing
- ✦ Sync with Quickbooks

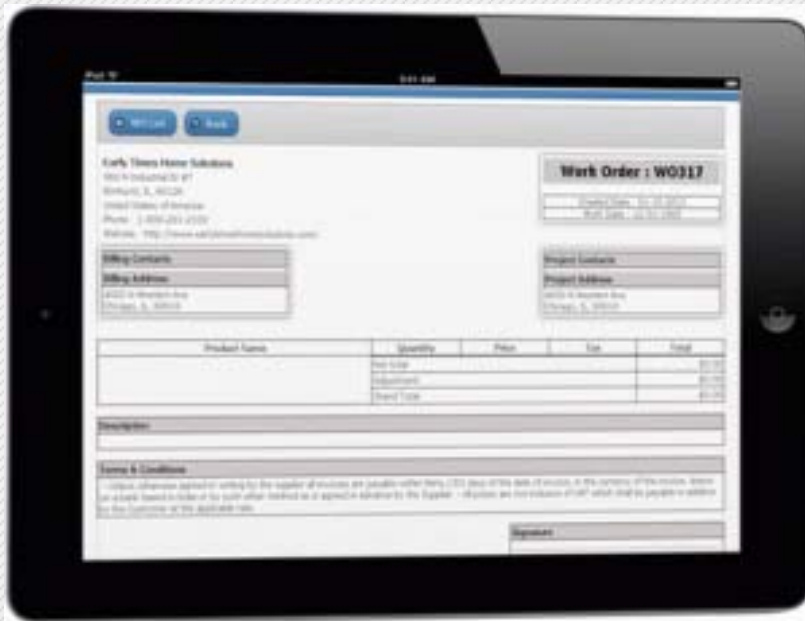


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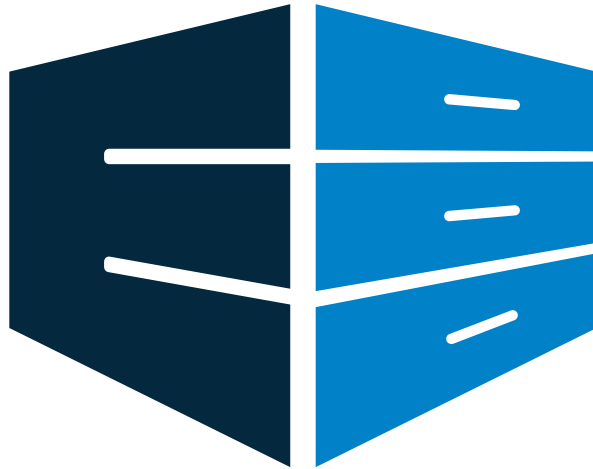


My eToolbox

My eToolbox is a
complete solution for
your service business



Visit us at Booth 114



My eToolbox

Megger

Megger Relay & Current Transformer (MRCT) Testing Instrument



PowerTest 2014
Denver, CO

MRCT – Key Features

- **Patented simultaneous tap measurements**
- **One-button automated operation test**
 - **Saturation Curves**
 - **Ratios**
 - **Winding Resistance**
 - **Insulation Resistance**
- **Accuracy to test metering CTs**
- **High Noise Immunity**
 - **Operates in 765kV Substation**

MRCT – Key Features

- Manual Control Capability
- Demagnetization
- Integrated single-phase relay tester
- Integrated display or STVI/laptop control



MRCT – Home Screen



**Run All Tests**

**Manual**

**Demagnetization**

**Self Diagnostic**

**Saturation**

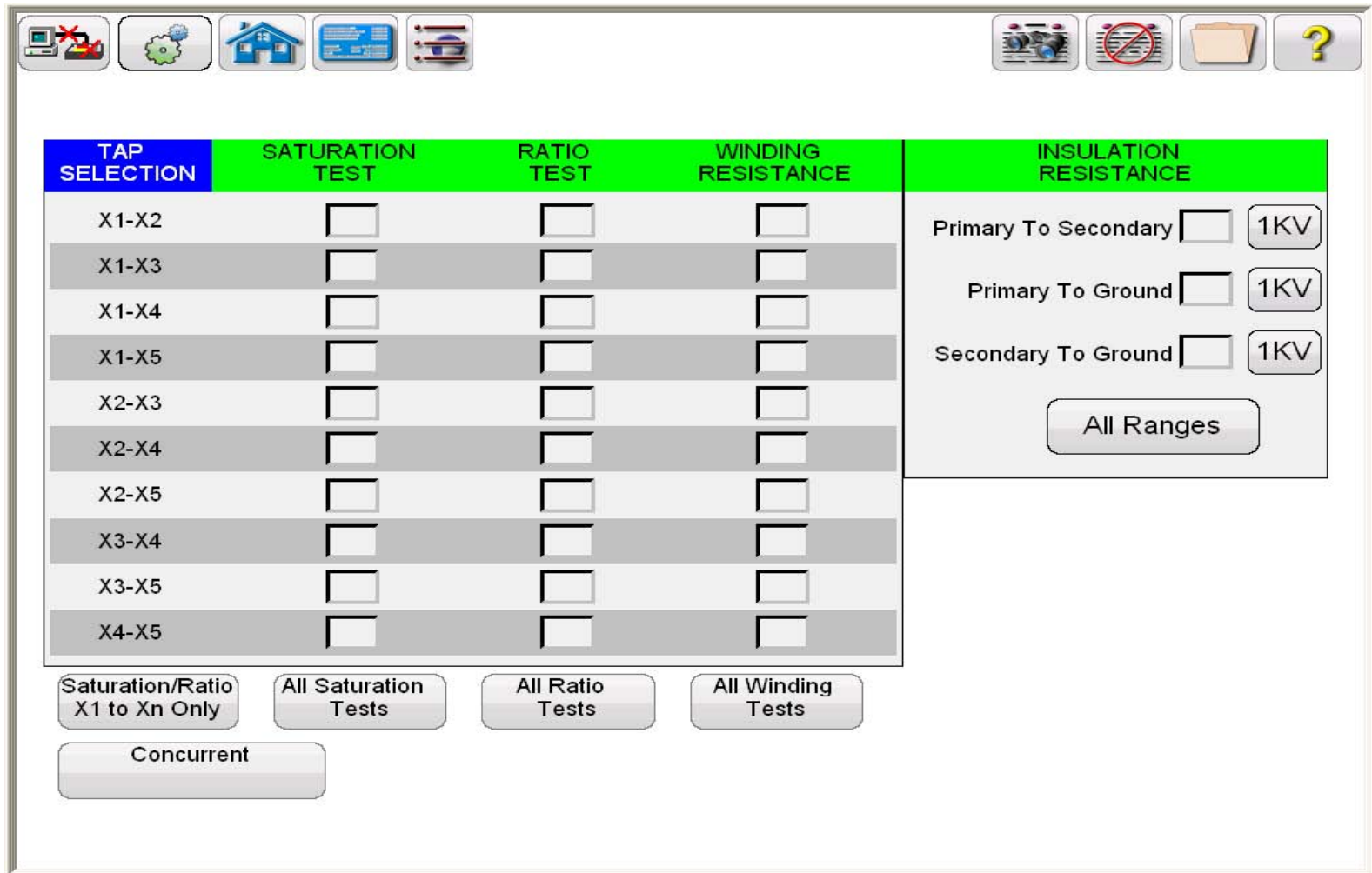
**Ratio**

**Winding Resistance**

**Insulation**

**Burden**

MRCT – Run All Tests Screen



The interface features a top toolbar with icons for a printer, settings, home, data, and a list. On the right, there are icons for a test setup, a crossed-out test setup, a folder, and a help icon. The main area is divided into two sections. The left section is a table with columns for TAP SELECTION, SATURATION TEST, RATIO TEST, and WINDING RESISTANCE. The right section is titled INSULATION RESISTANCE and contains three test options, each with a checkbox and a 1KV button, and an All Ranges button. At the bottom, there are four buttons for test selection: Saturation/Ratio X1 to Xn Only, All Saturation Tests, All Ratio Tests, and All Winding Tests, along with a Concurrent button.

TAP SELECTION	SATURATION TEST	RATIO TEST	WINDING RESISTANCE
X1-X2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
X1-X3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
X1-X4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
X1-X5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
X2-X3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
X2-X4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
X2-X5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
X3-X4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
X3-X5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
X4-X5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

INSULATION RESISTANCE

Primary To Secondary ☐ 1KV

Primary To Ground ☐ 1KV

Secondary To Ground ☐ 1KV

All Ranges

Saturation/Ratio X1 to Xn Only All Saturation Tests All Ratio Tests All Winding Tests

Concurrent

MRCT - Nameplate Info Screen

NAMEPLATE DATA

NO. OF CTs

NO. OF CORES

NO. OF TAPS

CT LABEL

NAME

MANUFACTURER

Meter

Relay

SERIAL NO.

ACCURACY CLASS

Asset ID

VA

PHASE

BURDEN

RATIOS

X1-X2 :

X1-X3 :

X1-X4 :


X1-X5 :

Comment A

Comment B

User Descriptions and Values

Description	Value
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>



MRCT – Report Screen

NAMEPLATE DATA CT: CT1X

MANUFACTURE# Megger

ASSET ID Megger_1234

BURDEN B-1

SERIAL NO. 1234

ACCURACY CLASS C800

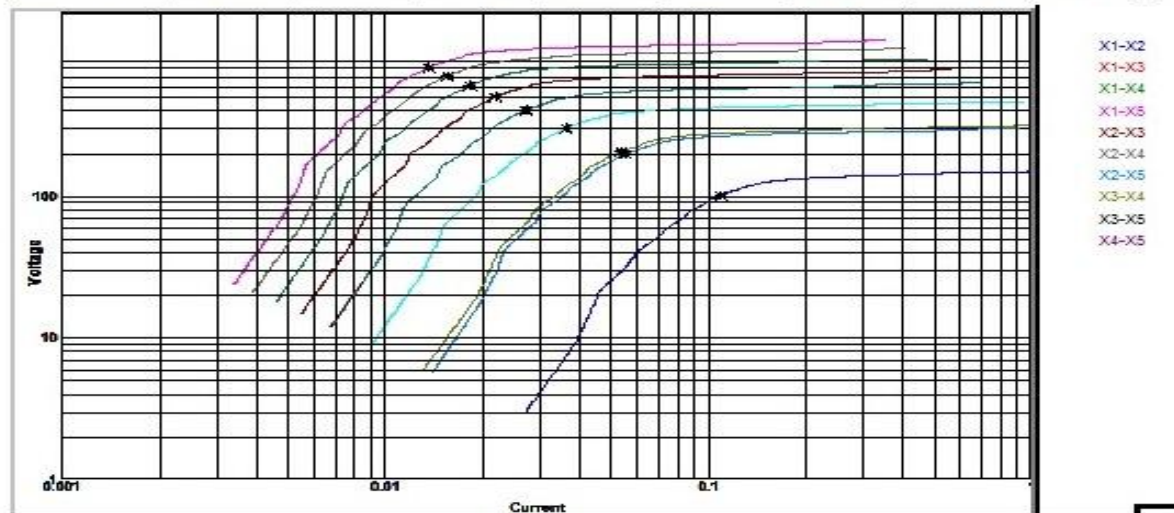
VA 25

PHASE A

SATURATION STD ANSI 45

Secondary Voltage Injection

Tap	X1-X2	X1-X3	X1-X4	X1-X5	X2-X3	X2-X4	X2-X5	X3-X4	X3-X5	X4-X5
Nameplate	500:5	2000:5	3000:5	4000:5	1500:5	2500:5	3500:5	1000:5	2000:5	1000:5
Measured	499.1361:5	2006.803:5	2996.653:5	4001.944:5	1507.667:5	2497.516:5	3502.808:5	989.8487:5	1995.14:5	1005.292:5
% Error	0.173	0.340	0.112	0.049	0.511	0.099	0.080	1.015	0.243	0.529
Test V (V)	299.00	299.00	299.00	299.00	299.00	299.00	299.00	299.00	299.00	299.00
Test I (A)	0.0641	0.0160	0.0107	0.0080	0.0212	0.0128	0.0091	0.0323	0.0160	0.0318
Prim V (V)	2.9952	0.7450	0.4989	0.3736	0.9916	0.5966	0.4268	1.5103	0.7493	1.4871
Phase	0°30'	0°30'	0°30'	0°30'	0°30'	0°30'	0°30'	0°30'	0°30'	0°30'
Polarity	Correct	Correct	Correct	Correct	Correct	Correct	Correct	Correct	Correct	Correct
Knee Volt.(V)	101.30	404.08	602.47	809.75	302.76	501.16	708.45	198.38	405.55	207.10
Cur.(A)	0.1088	0.0272	0.0182	0.0136	0.0362	0.0219	0.0156	0.0553	0.0273	0.0537
Resist. (Ohms)	4.500	5.000	5.500	6.000	0.500	1.000	1.500	0.500	1.000	0.500



Megger Relay Current Transformer Tester



Find us at Booths 310 - 316

Megger[®]

2014
POWERTEST
CONFERENCE

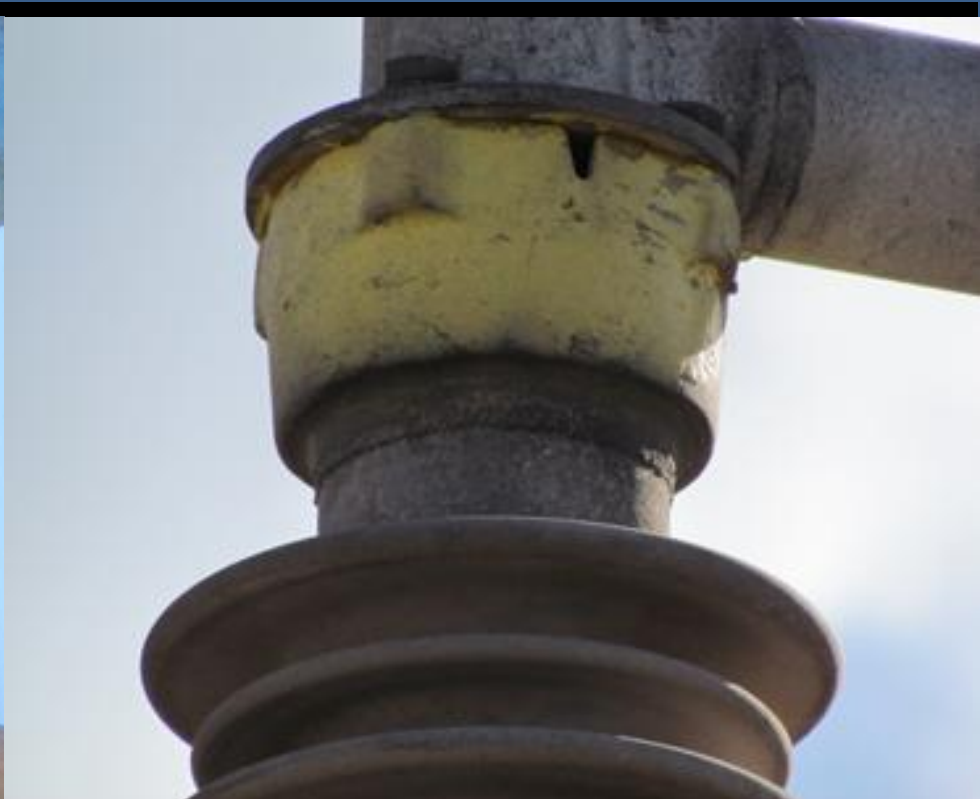
NETA

OFIL Ltd.



looking for the hidden light?







Ofil can find it for you

16/09/2013 08:42



REC
COMBINE AF GAIN 180 LI OF

16/09/2013 08:33



REC
COMBINE AF GAIN 180 COUNTER 786

16/09/2013 08:51



REC
COMBINE AF GAIN 180 LI OF

16/09/2013 09:11

OFIL

REC
COMBINE AF GAIN 180 COUNTER 2632



CORONA



ARCING



SPARKS



PARTIAL DISCHARGE



UV radiation hidden at daytime





UVollé Stills & Video Daytime Corona Camera



- light
- compact
- affordable

UVollé Stills & Video Camera

- Immediate fault detection
- Zoom in to see the problem
- Capture videos with GPS & date
- Record your comments
- Long lasting battery
- Built-in flash light for dark places
- Corona severity index
- SIMPLE & EASY operation





UVollé Stills & Video Camera



UVollé Camera
come and **try**



BOOTH **706**

OMICRON electronics Corp. USA



NETA New Product Forum:

OMICRON's Latest Innovations

Houston, TX

21 March 2014

CIBANO 500



First circuit breaker test system to combine a precise micro-ohmmeter, a multi-channel timing analyzer and a powerful coil and motor supply

VOTANO 100



Highly accurate instrument transformer testing and calibration system

DANEO 400



Distributed hybrid measurement system that records and analyzes all conventional signals

ISIO 200



Binary I/O terminal for substation automation systems with IEC 61850 GOOSE interface

OMICRON Academy – Houston Training Center



State-of-the-art, air-conditioned training facility with the ability to test various apparatus such as a 10 MVA power transformer, circuit breakers, distribution automation, and a hands-on protection relay testing lab

Thank you!

- > Please visit our redesigned website at www.omicronusa.com for detailed information on these products.

Power Diagnostics Services Co., Ltd.

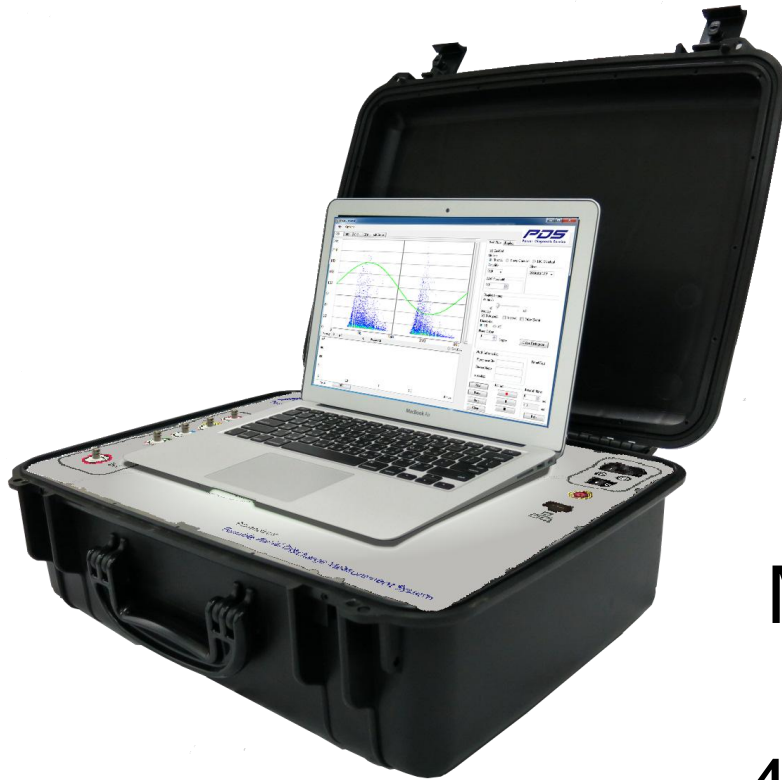
PDS

Power Diagnostic Service Co., Limited

PDSolution
PDSimply
PDCare

PDSolution

Your only PD solution



Integration of

PRPD Pattern Measurement
Spectrum Analysis
Oscilloscope

Max. 5 GS/s sampling rate
Or
4 x 1.25 GS/s sampling rate

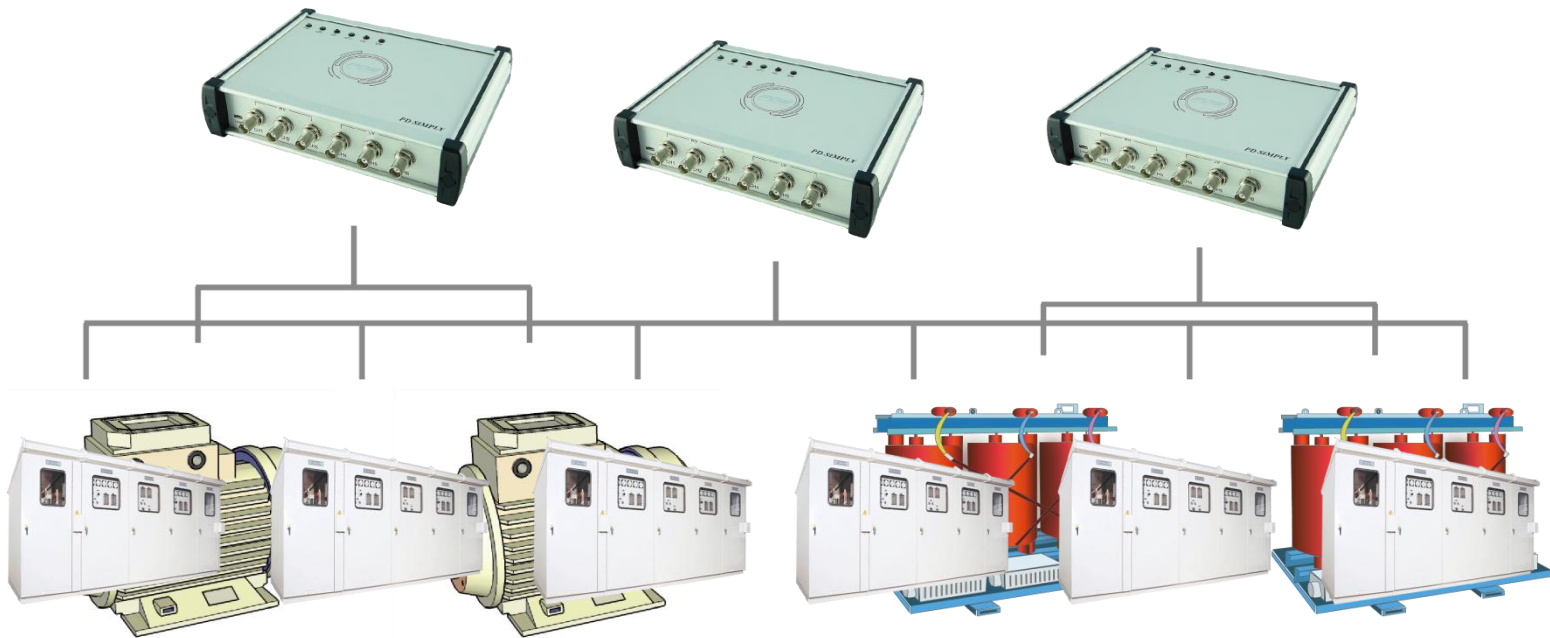
PDSimply

makes on-line PD measurement
simple

- The state of art UHF PD detection tech.
- The rule of thumb in identification
- No computer required; no additional filters required;
no complex approach
- Different modes: stand-alone, monitoring server,
PDCare coordinating mode...



PDSimply provides 6 channels!





Your Assets, We Care

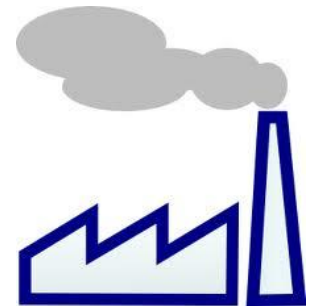
24/7 Cloud Service

Services:

- Free maintenance
- Self monitoring
- On-line monitoring
- Performance & sensitivity test
- Risk Assessment
- Diagnosis & analysis
- Periodical report
- On-site support include PD location

Hardware:

- PD sensors
- PD devices – **PDSimply**
- Full set of desktop
- Cable & wire



Thank you!

For more information, please
visit us at booth #112 tomorrow.

www.pdservice.com

Power Monitoring and Diagnosis Technology, Ltd.

PMDT

Power Monitoring & Diagnosis Professionals

PDetector New Product Introduction

Prepared by: Dustin Ashliegh
1/9/14

Headquarters

- Silicon Valley, CA
- PMDT specializes in Partial discharge monitoring and diagnosis for medium and high voltage electrical assets
- Over 20 Years of R&D with more than 80 years of combined PD experience

Mission

- Increased reliability and safety for the operation of Power Systems

Users

- Utilities
- Industrial power users
- Equipment manufacturers
- Commercial & Government
- Data Centers
- Electrical Contractors and Service Companies

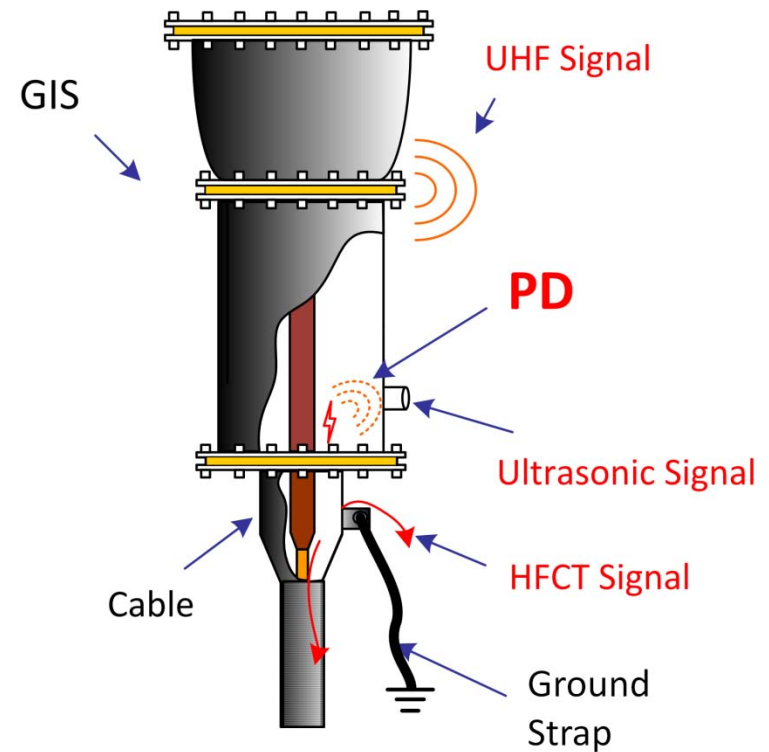
What is Partial Discharge ?

Partial Discharge Emissions

- Light
- Heat
- Odeur (Ozone, nitrous oxide, gas)
- Sound (Audible and Ultrasonic)
- Electromagnetic pulse

Typical PD Types

- Corona
- Floating
- Particle
- Void
- Surface



Why Detect and Monitor PD Activity?



- MV & HV electrical equipment commissioning quality assurance
- To provide reliable Condition Assessment
- To prioritize electrical equipment maintenance and repairs, optimize replacement strategies
- Assists in HI and Asset Management
- To avoid unplanned outages
- Trouble shooting and failure investigations
- Safety

PDetector Series

Handheld Partial Discharge Detectors



Application

- GIS
- MV switchgear
- Power cables
- Transformers
- Substations

Detection Bandwidth

- TEV: 3MHz~100MHz
- UHF: 300MHz~1500MHz
- AE: 20kHz~300kHz
- Ultrasonic: 40kHz
- HFCT: 500kHz~50MHz

* Configurations and functions are customizable upon your request.

Features

- Light weight, handheld, and easily deployed
- Real-time scrolling 3D-PRPS and 2D-PRPD spectrum
- Multiple sensor technologies
- Wireless sensor technology
- Intelligent patrol
- RFID scanning to read info. of apparatus
- Data storage and powerful data analysis software
- Fast detection suitable for daily monitoring



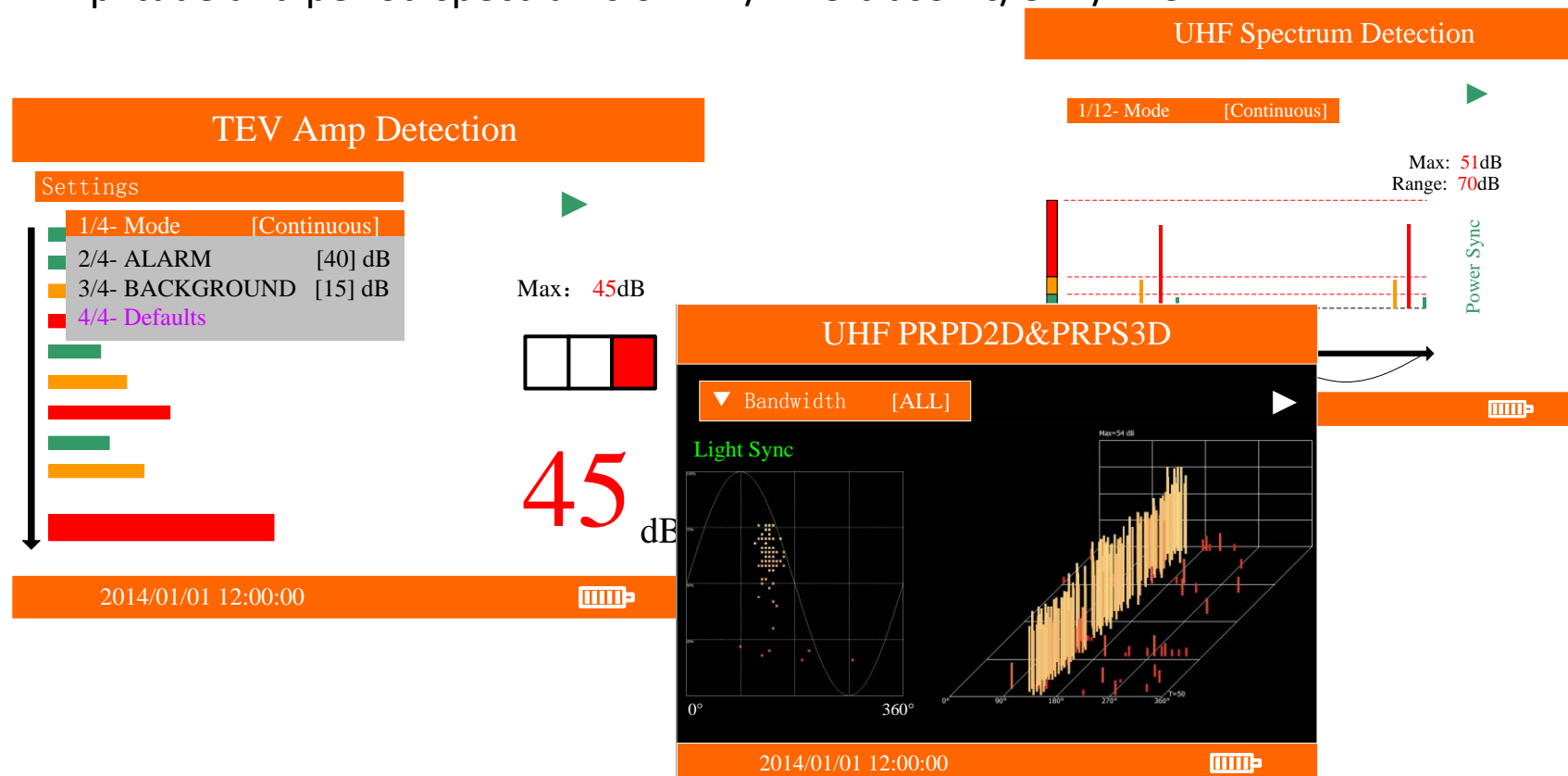
Specifications



- Resolution: 1dB
- Accuracy: ± 1 dB
- Size: 7.29" x 4.33" x 1.38"
- Weight: 0.9lbs
- Display: HD LCD screen
- Data Connector: Mini USB
- Power supply: Li-ion, typical operating time: 6 hours; rechargeable
- Operating temperature: 5°F~130°F/-15°C ~55°C
- Humidity: 0 ~ 90%, non-condensing

Typical User Interfaces

- Real-time scrolling 3D-PRPS and 2D-PRPD spectra
- Amplitude and period spectra of TEV/AE Ultrasonic/UHF/HFCT



Recommended Configuration Kits

Configured with different combination of sensors

Kit 1, **Multi-Function:** for GIS, MV Switchgear, Cables, Transformers, and Substations

Features:

- Full PD detection functions in one machine
- TEV/AE/UHF/HFCT amplitude and period spectrum^s
- Real-time scrolling 3D-PRPS and 2D-PRPD spectrum^s
- Severity evaluation



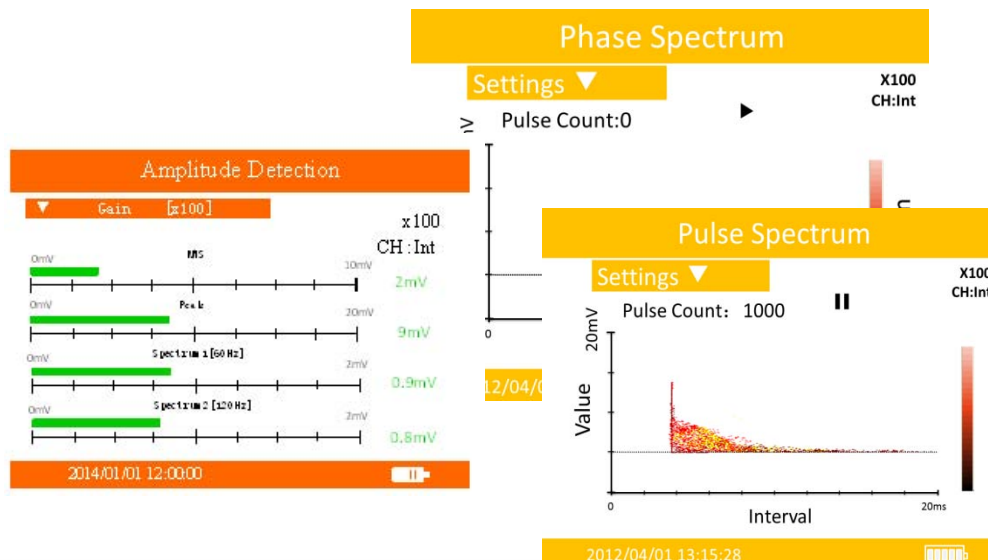
Recommended Configuration Kits

Configured with different combination of sensors

Kit 2, Acoustic/Ultrasonic: for GIS, MV Switchgear, Cable accessories and Transformers

Features:

- RMS, PEAK, and frequency content(x1,x2)
- Phase-resolved, pulse, and waveform spectrums
- Listen PD activities by headphones

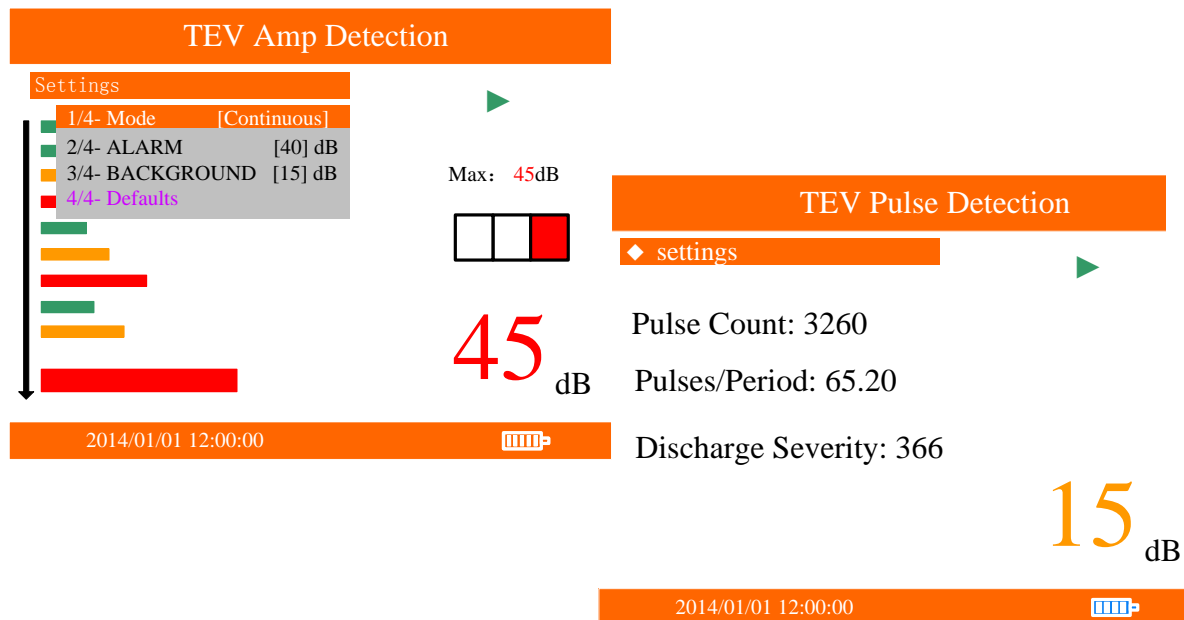


Recommended Configuration Kits

Configured with different combination of sensors

Kit 3, **TEV/AE Ultrasonic**, for MV Switchgear

- TEV amplitude, pulse, and severity
- Ultrasonic amplitude
- Data management system



15 dB

Recommended Configuration Kits

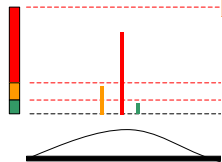
Configured with different combination of sensors

Kit 4, UHF/AE Ultrasonic, for GIS

- UHF amplitude and period spectrums
- AE and ultrasonic amplitude

UHF Spectrum Detection

1/12- Mode [Continuous]



2014/01/01 12:00:00

AE Detection

◆ Settings

1/6- Gain [100] dB

2/6- Volume [9]

3/6- CH [Int]

4/6- ALARM [30]dB

5/6- BACKGROUND [5]dB

6/6- Defaults

High Gain



-3 dB

2014/01/01 12:00:00

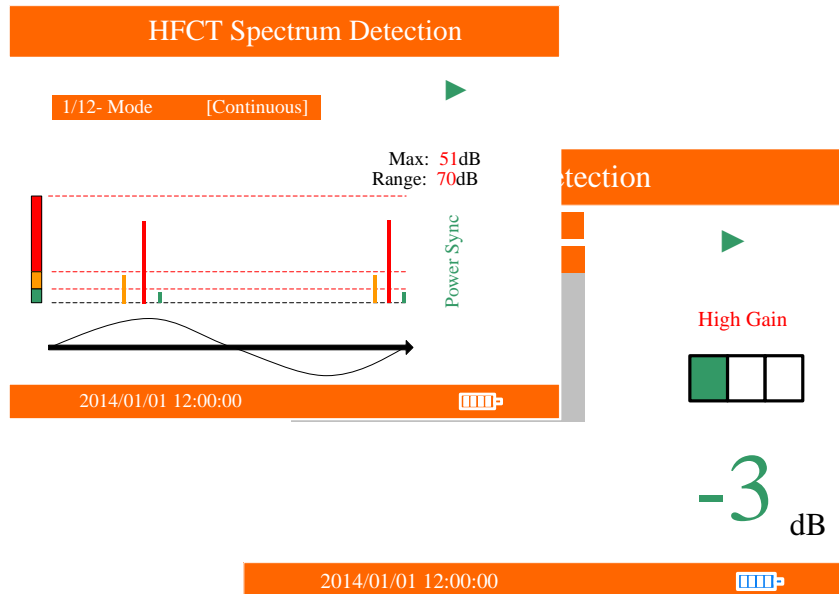


Recommended Configuration Kits

Configured with different combination of sensors

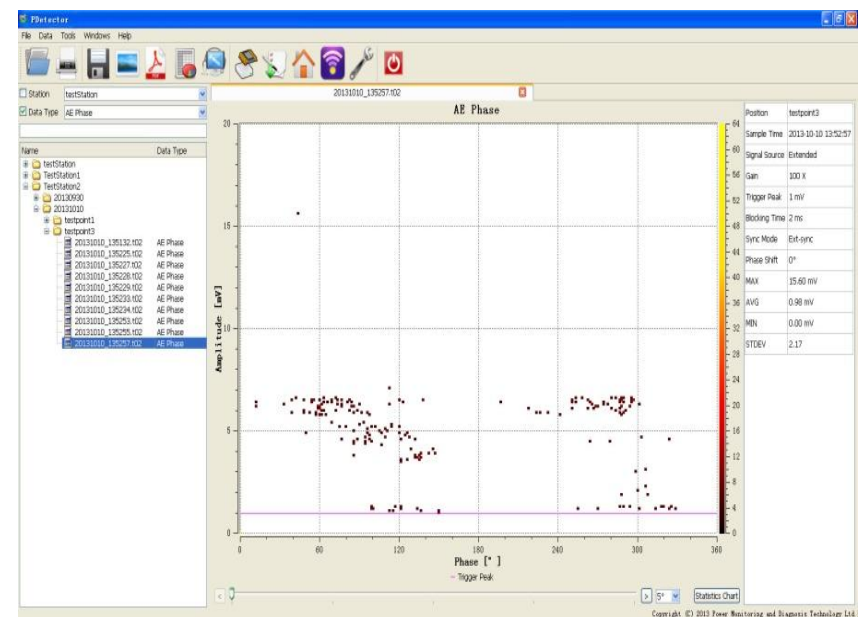
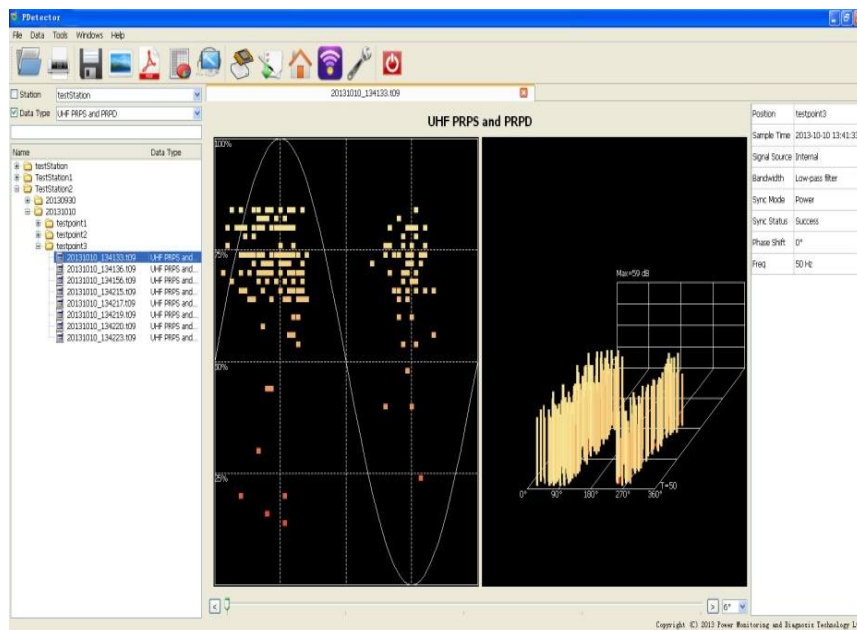
Kit 5, HFCT/AE Ultrasonic, for Power Cables and Transformers

- HFCT amplitude and period spectrums
- AE and ultrasonic amplitude



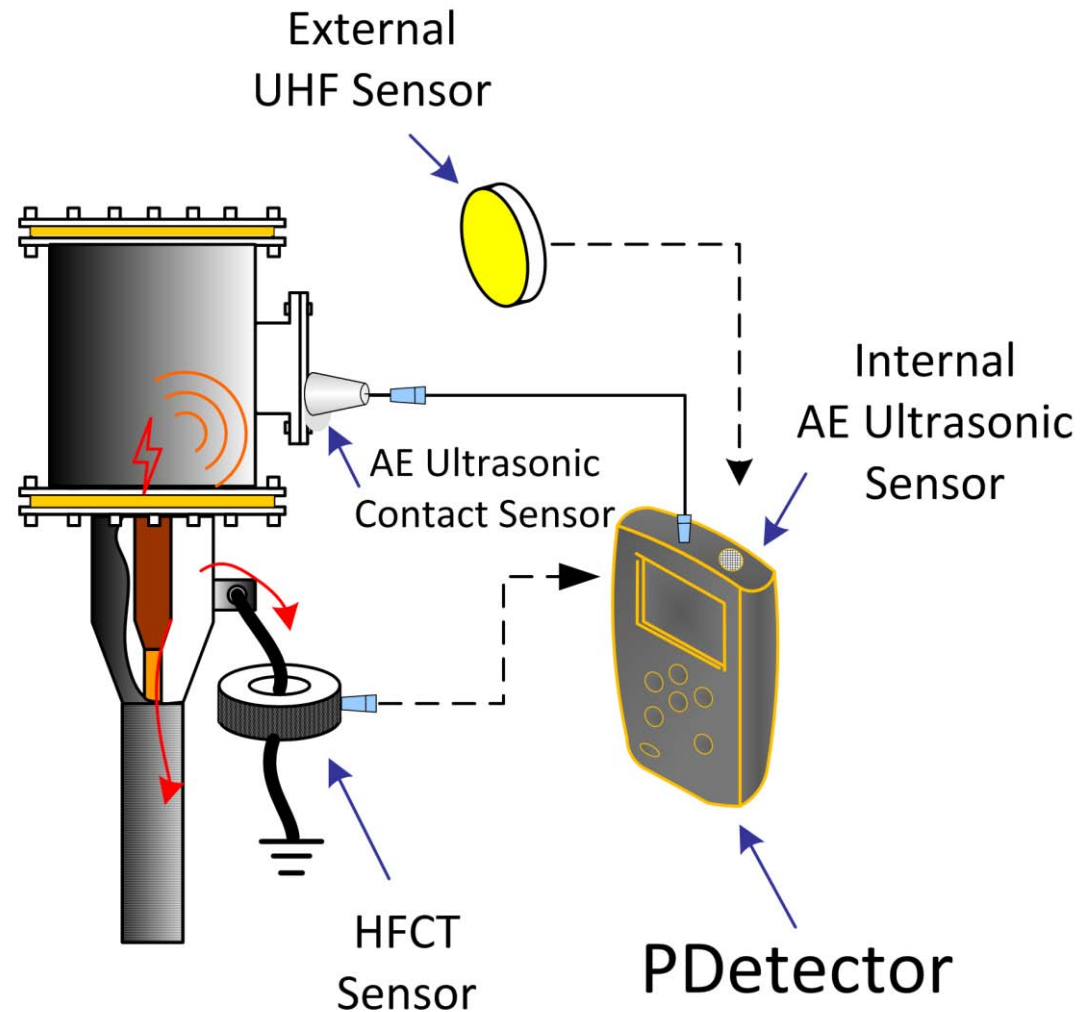
PDetector Software

- Data storage, analysis, and application
- Automatically generates a variety of analysis and management reports
- Grading operation realized through multi-level authority management
- Multiple data analysis tools available



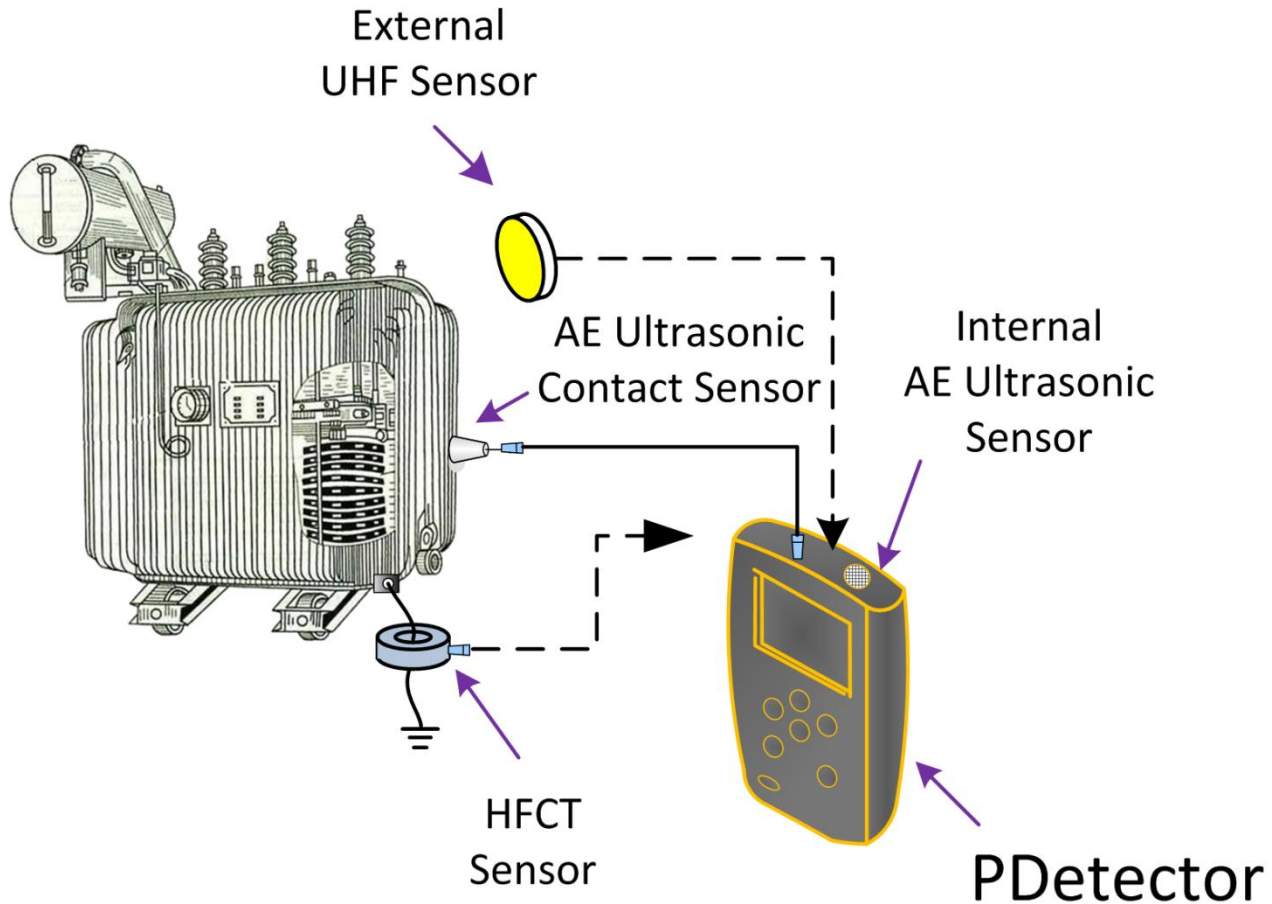
How to Use PDetector

GIS



How to Use PDetector

Transformer



Power Monitoring & Diagnosis Professionals

Visit us at Booths 713 & 715

to see our full line of Partial Discharge instruments and complete online monitoring systems.

Power Monitoring and Diagnosis Technology LTD.

Thank You



POWER MONITORING AND DIAGNOSIS TECHNOLOGY LTD.



Tel: 408-246-5588

Fax: 408-247-5678

Email: [sales @ powermdt.com](mailto:sales@powermdt.com)

Add: 4010 Moorpark Avenue, Suite 220,
San Jose, CA 95117, USA

PowerDB

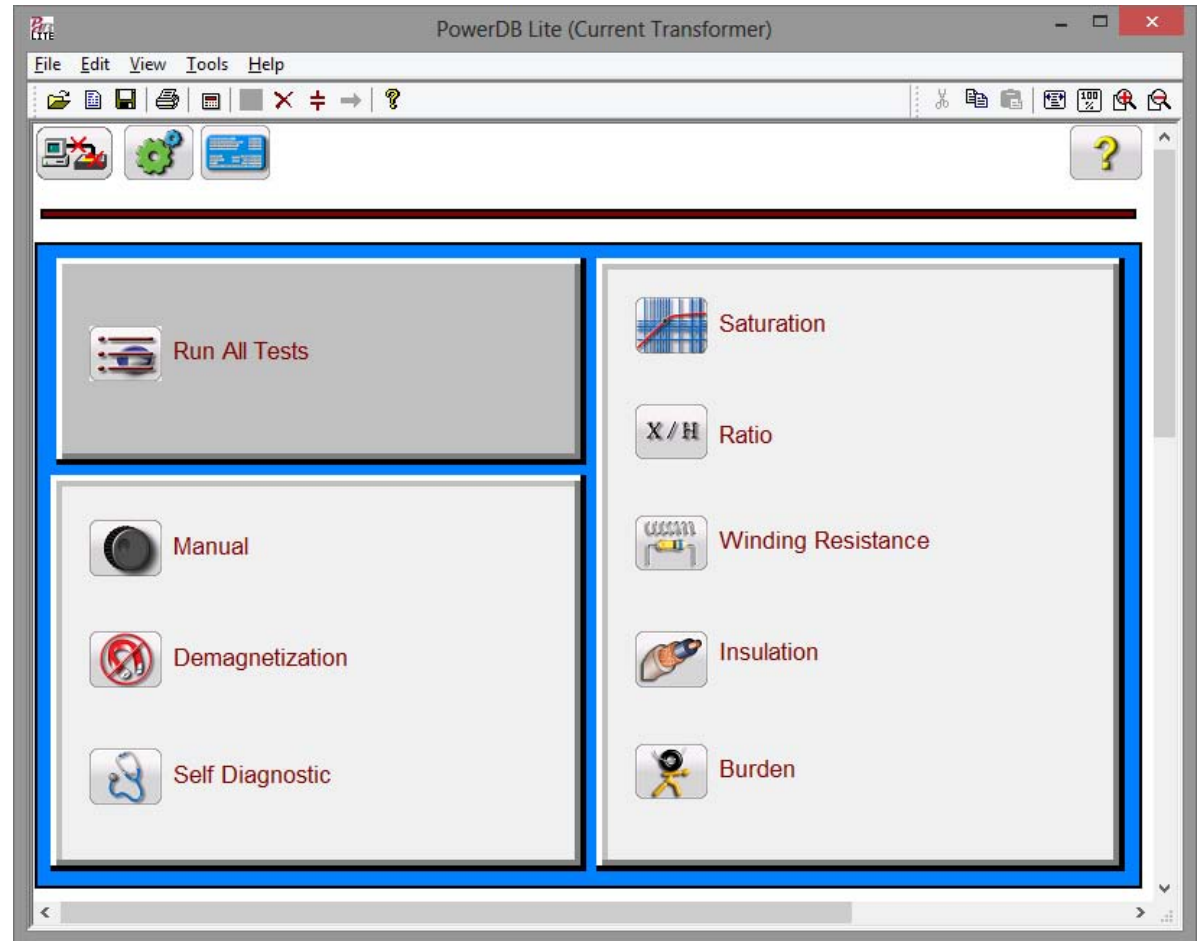


Test Data Management Software



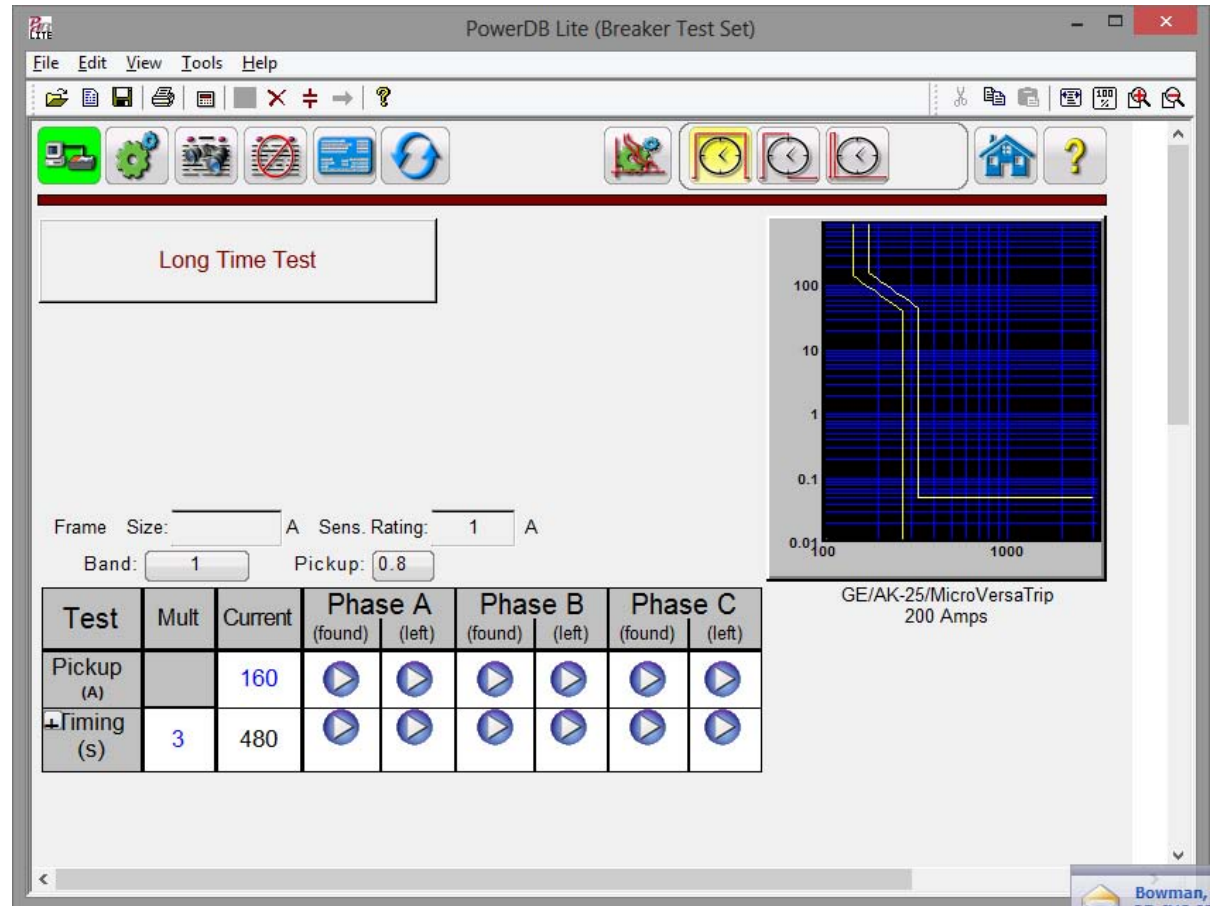
New From PowerDB

- MRCT
 - Current transformer test set



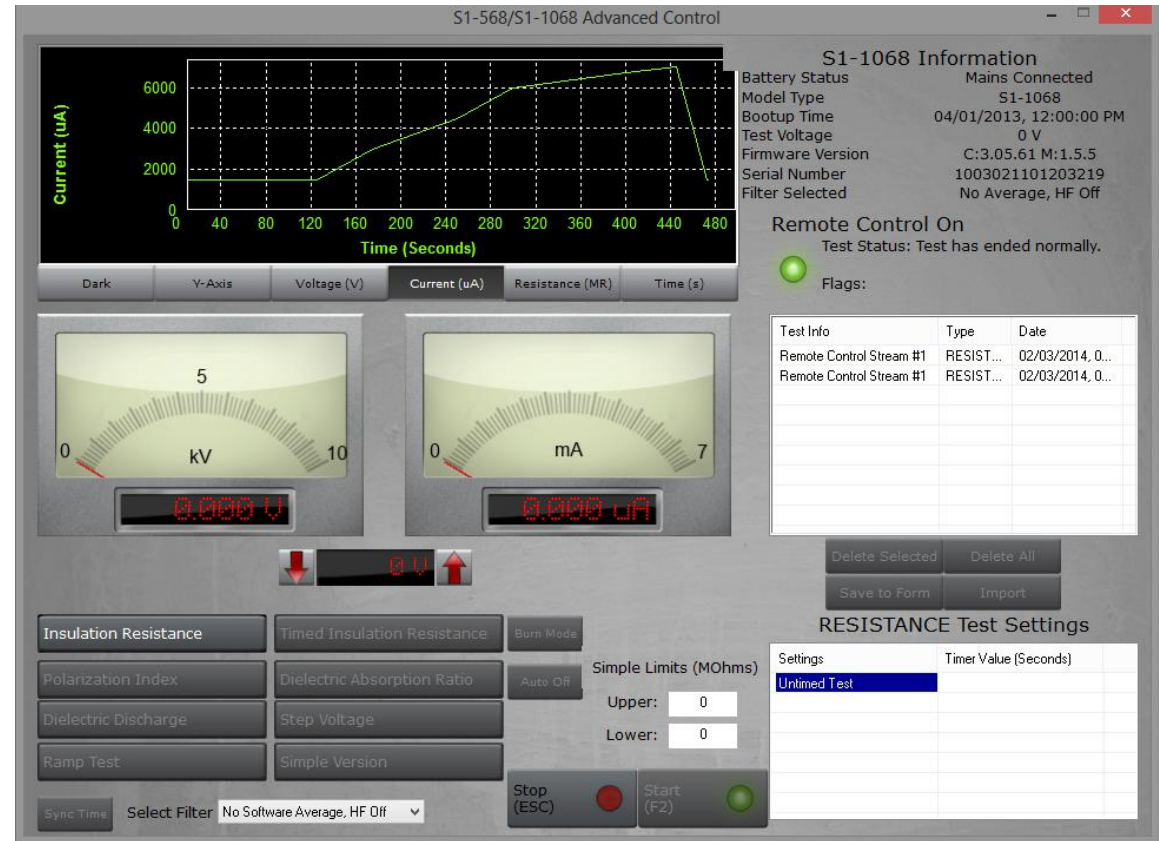
New From PowerDB

- SPI
 - Circuit breaker primary injection



New From PowerDB

- S1-568/1068
 - Insulation resistance tester



New From PowerDB

- DTA 6 Import
- PDC Import
- Weidmann Update
- SD Myers Update
- Active Directory Support
- Jobless Application Style
- Auto-Complete Data Entry
- Compare/Update Forms to Latest Version



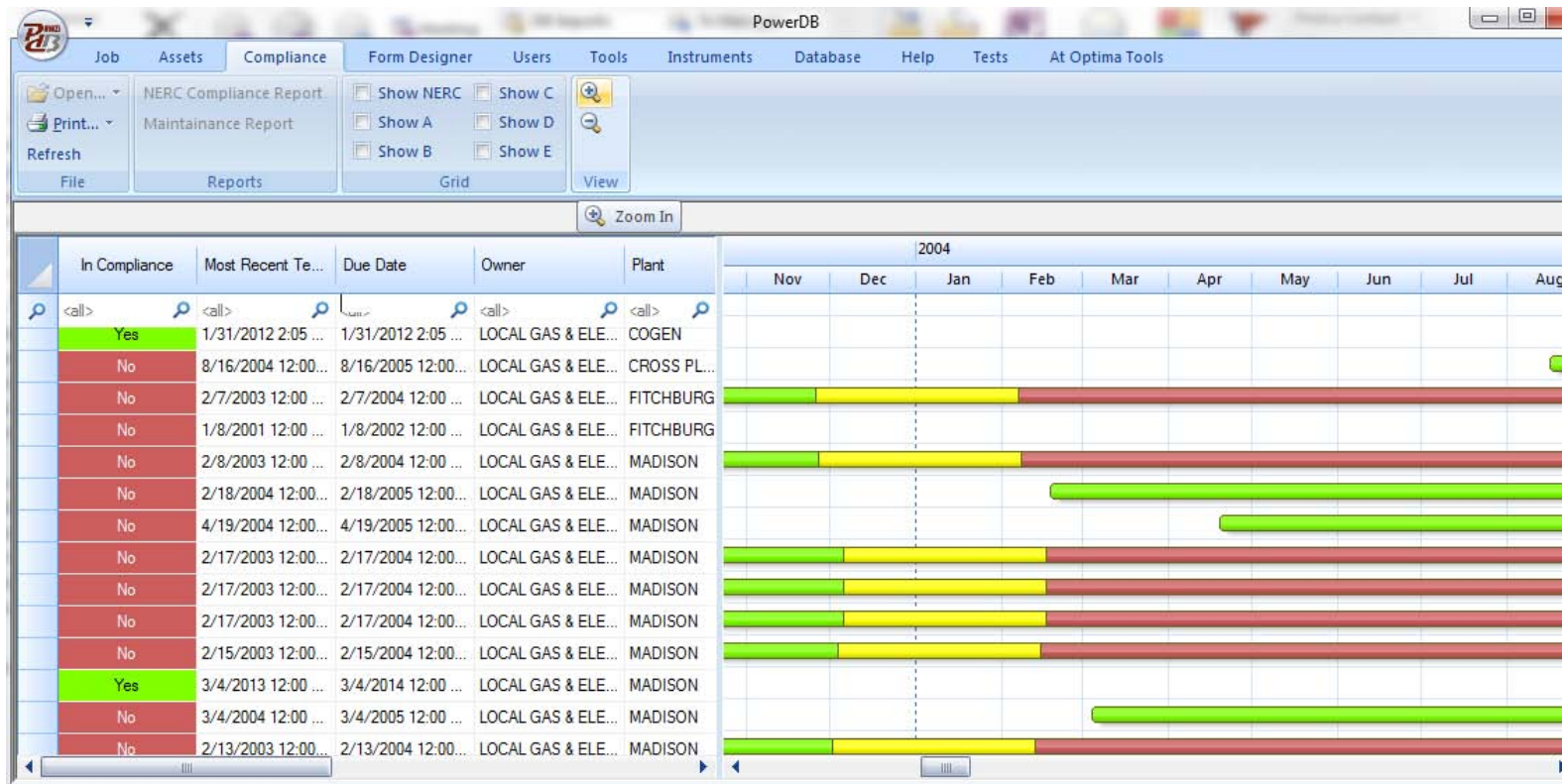
New From PowerDB

- API
 - (Application Programming Interface)
- Data Warehouse



New From PowerDB

■ Compliance View



New From PowerDB

- Assets View
- Results View



Visit us at Booth 310

**Hospitality Suite
Tuesday
6pm to 10pm
In Agate C**



try out the latest 3-D immersive technology




ProgUSA- DV Power



PROGUSA REPRESENTS SELECTED MANUFACTURERS OF
HIGH QUALITY SUBSTATION TEST EQUIPMENT ACROSS
THE ENTIRE USA

Specializations



- ▶ Partial Discharge Testing
 - ▶ SF6 Gas Testing and Servicing
 - ▶ Dynamic Load Tap Changer LTC Testing
 - ▶ Battery Testing
 - ▶ Oil Processing and Reconditioning
 - ▶ Transformer Testing
 - ▶ Breaker Testing
 - ▶ Protective Relay Testing
- 



EA Technology

Partial Discharge Testing of Energized Equipment

- ▶ UltraTEV + MV

combines 40kHz ultra sonic and 20-80mhz TEV
3kV to 69kV

- ▶ PD Hawk HV

800mHz detection of internal and external PD on
High Voltage systems above 69kV

Cable Data Collector detect, locate and
characterize PD in shielded cables



DV Power

RMO 200G Lightweight, 200A ductor with no ripple on output, no spikes, never set of differential relays during breaker test. Strong Lightweight cables.

TWA TRT Combined Transformer Testing - Connect 3 phase cables to transformer only once and test Turns Ratio, Excitation current, Phase angle, Winding Resistance, DRM (Dynamic Tap Changer Graphing), and AutoDEMAG. DV -Power's patented AutoDEMAG is known for the being the fastest and most thorough.

CAT500 Circuit Breaker Timing and Contact Resistance combined



SF₆



Model GFU10

RH
systems

973-SF₆ Analyzer

Laboratory Precision - Field Ready



- SF₆ gas specific analyzer
- Measurement of humidity: Dew/Frost Point, ppm_v, and ppm_w
- SF₆ purity: %Vol. SF₆
- Optional SO₂ measurement: ppm_v concentration
- Gas containment system with automatic pump back; No gas loss
- Fundamental measuring principle
- Dew/Frost Point results at SF₆ compartment or standard pressure
- Full color touch screen user interface
- User verifiable calibration
- Simple to set up, use and maintain
- Easily transportable
- Supplied complete with robust transport case

Battery Testing

Load Testing

- ▶ DV Power 200A Battery Load Unit
- ▶ ISA BTS 130A
- ▶ Cellizer CS4001
(voltage scanning)

Impedance Testing

- ▶ Cellizer RT Datalogging Impedance and Voltmeter
- ▶ 600NPX2 – High accuracy impedance measurement and Flash Load test for cell health assessment and Capacity calculation



ISA

STS Power Factor
T2000 Primary Injection
T3000 Multi-function
Transformer Commissioning
Tools
DRTS Digital Relay Test
System
BTS Battery Testing
CBA Breaker Testing
TFS Travelling Wave Fault
Location (online)

590G CT Tester

Testing ratio and
phase error,
resistance,
admittance(new!),
excitation curve
and knee point,
polarity and burden.
Also has LIVE CT
testing option!



590G-V2 CT ERROR TESTER

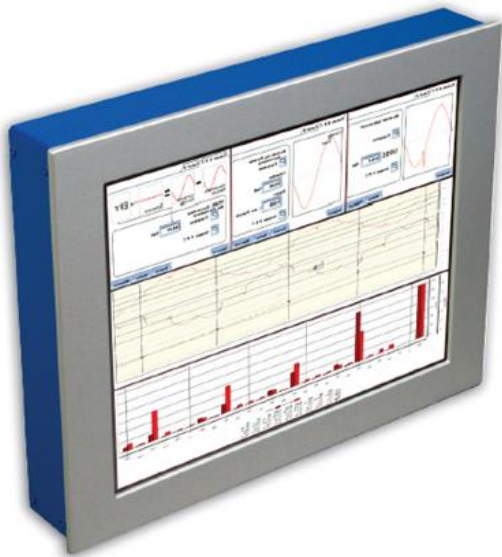


Schafer Electronics, Inc. (Power Quality Group)



Power Conversion – Power Quality – Power Electronics

Jeff Roffee
Director of Power Systems
Schaefer Electronics Inc
Boston Mass
2014



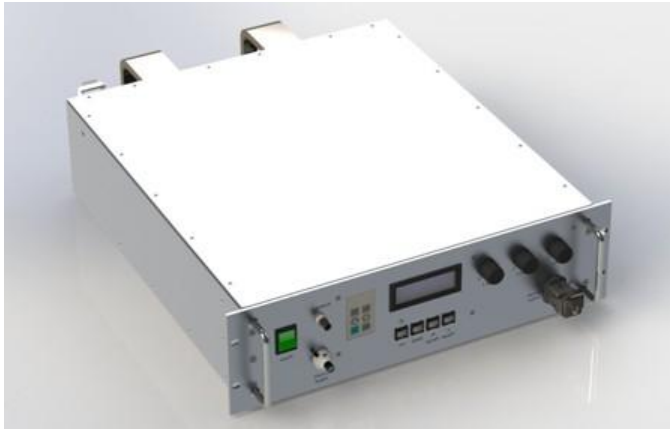
Active Harmonic Filter Series – NEW -
Harmonics mitigation, phase displacement
correction (PF), and phase balance.

POWER BALANCE

 active filter technology

www.SchaeferPower.com





Electronic Loads – NEW -

Our series of Electronic Loads are liquid cooled and customizable to high voltage/power levels (AC or DC).

PowerStack – NEW –

Building blocks are hot swappable, configurable, & liquid cooled.

Power ranges from 400KW to 10MW+ (AC/DC, AC/AC, DC/AC, high-end AC Drives, & grid-tie systems.).

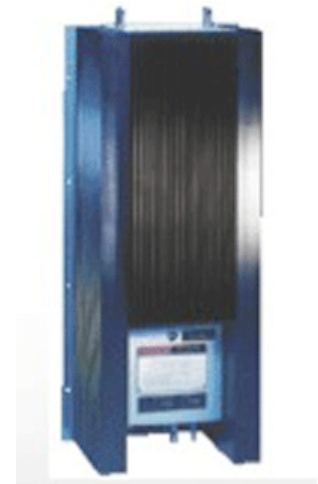
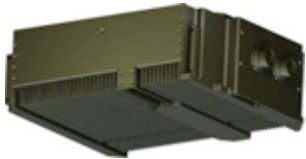
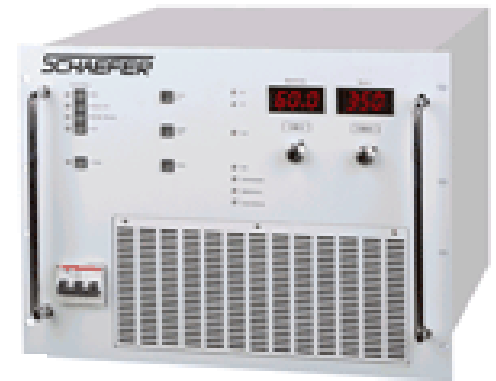
Power Systems

Power Stack: 400KW - 10MW+

- AC/DC Power Supplies
- DC/DC Converters
- UPS
- Battery Chargers
- Inverters
- Frequency Converters



- 400KW to 10MW+ full power converter systems
- Wind Turbines with Permanent Magnet Synchronous Generator
- Newest state-of-the-art IGBT's
- High reliability capacitors
- 97% efficiency
- High MTBF
- Ruggedized for harsh environments



6K+ base power systems / 2K+ customs
Example of Power Conversion units/systems.



Power Conversion – Power Quality – Power Electronics

Jeff Roffee
Director of Power Systems
Schaefer Electronics Inc
Boston Mass
2014

Schweitzer Engineering Laboratories, Inc.



SEL-4520 Arc-Flash Test Module



SEL-4520 is Portable and Convenient



Test the SEL-751 and SEL-751A Feeder Protection Relays and other arc-flash detection relays that use light and overcurrent to sense an arc-flash event.

SEL-4520 Arc-Flash Test Module

Key Benefits

- Ideal testing tool for commissioning testing
- In the field, use the SEL-4520 to test arc-flash protection relays installed in low- and medium- voltage switchgear
- At your desk, use the SEL-4520 to verify proper operation of arc-flash trip settings
- Portability – about the size of a paperback

**Come see us at booth 413
to learn more!**

SMC

International

THE NEW RAPTOR

INNOVATION IN PRIMARY INJECTION TESTING

A new concept for Primary Injection Testing in electrical substations and industrial installations. The Raptor is small, lightweight, accurate, and far more productive than traditional primary testing sets.



TEST ALL THIS & MORE!

- Circuit Breakers
- Reclosers & Sectionalizers
- CT's (Ratio to Saturation)
- Switchgear
- Heat Runs
- Ground Grid

WEIGHT
32 kg

MAX. CURRENT
15 kA

SIZE
440 x 230 x 550 mm

MAX. POWER
18 kVA*

*with slave units

POWER IN MOTION

Find out more at:

www.smcraitor.com



Utility Relay Company

URC

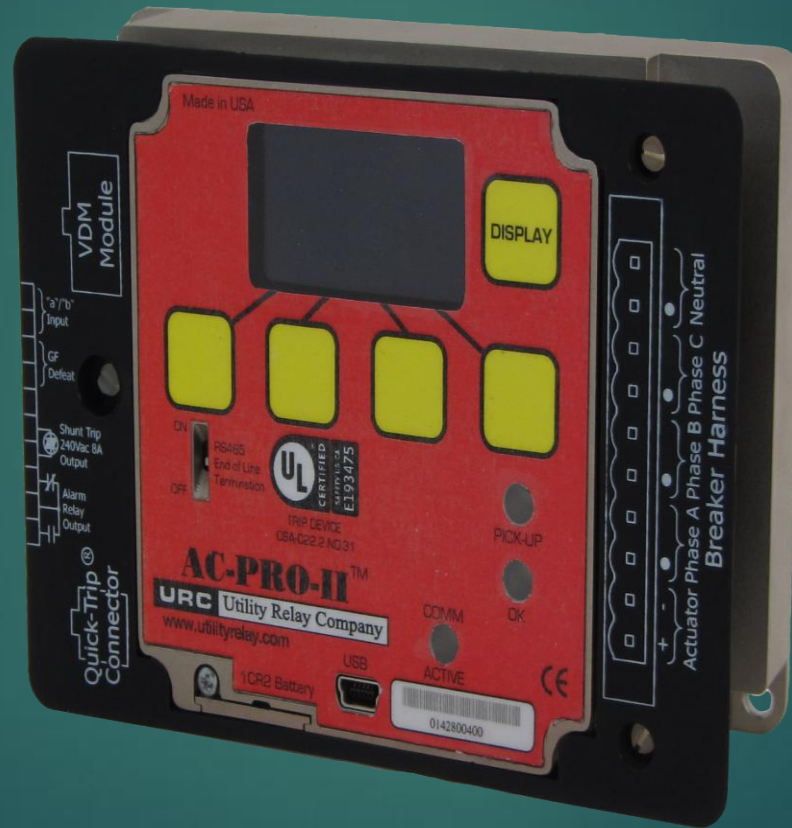
Utility Relay Company

PRESENTS

AC-PRO-II™ &

AC-PRO-MP-
II™

AC-PRO-II™





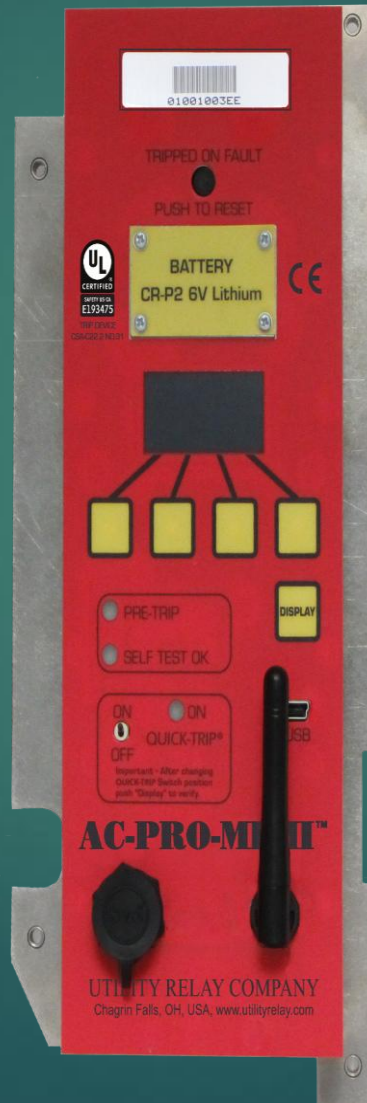
The AC-PRO-II carries the CE label and is ANSI C.37.59/UL Listed for the following breakers:

- ▶ LA-1600
- ▶ DS-206
- ▶ DS-416
- ▶ DS-632
- ▶ AKR-75
- ▶ K-3000
- ▶ K-1600
- ▶ K-800
- ▶ K-600



The AC-PRO-II has also been certified to withstand radio frequency interference per the ANSI C37.90.2 standard.

AC-PRO-MP-II™



Visit us at booths
504 & 506



Vacuum Interrupters, Inc.

Visit us at
PowerTest
Booth
#407

WHEN **PASS-FAIL** **ISN'T** ENOUGH



Trust Magnetron Atmospheric Condition (MAC) testing to predict the remaining life of your vacuum interrupters

THIRD-GENERATION MAC-TS4 VACUUM INTERRUPTER TEST SET NOW WORKS WITH YOUR PC TO SIMPLIFY TEST REPORTS AND ASSET MANAGEMENT

- WORLD'S FIRST VACUUM INTERRUPTER TEST SYSTEM CAPABLE OF PREDICTING REMAINING LIFE
- WORLD'S FIRST TEST SYSTEM CAPABLE OF TESTING VACUUM INTERRUPTERS IN BOTH THE SHOP AND FIELD
- BASED ON SAME OEM LEAK-RATE TEST PERFORMED AT THE FACTORY
- MEASURES ACTUAL ION CURRENT AGAINST KNOWN VALUES TO DETERMINE VACUUM INTERRUPTER INTERNAL PRESSURE

Flexible Magnetic Field Coil

A flexible field-based magnetic coil for testing vacuum interrupters while installed in a breaker/contactor. The flexible magnetic coils are used in conjunction with the MAC-TS4 tester. The flexible magnetic coil comes in various lengths to accommodate most vacuum interrupters.



MAC-TS4

SPECIFICATIONS

Type: MAC-TS4

Physical Specifications: 16.9" × 12.6" × 9.8" (430mm × 320mm × 250mm) Weight: 28.4 lb (12.9Kg)

Input Power: 120V AC 50/60Hz (standard), 230V AC 50/60Hz (optional)

Measure Range: 1×10^{-5} Pa ~ 1×10^{-1} Pa

Measure Accuracy: <10% of the reading

Display: Back-lit LCD screen (320 × 240 pixels); viewable in bright sunlight and low light conditions

Printer: Built-in 2.2-in. wide thermal printer

Internal Test Record Storage: Stores up to 500 test results

Computer Interface: One USB interface

Computer Software: Windows®-based software included with purchase price

Certifications: CE certified

Environment: Operating: -10°C to +50°C (+15°F to +122°F)

Humidity: 85% Rh @ 40°C (104°F) non-condensing

Altitude: 2,000 M (6,562 ft) to full safety specifications

Cables: Furnished with full set of test leads (including high-voltage output cable, signal input cable, magnetic coil output cable, 20-ft ground cable, and USB cable)

Options: Various-sized fixed coils

Warranty: One year on parts and labor

Exchanging MAC-TS2 for MAC-TS4

- If you already own a MAC-TS2 we will upgrade your system to the new MAC-TS4 at no charge.
- Additional fee if operating software was not purchased with the initial test set



BOOTH 407

Vacuum Interrupters, Inc.

3414 Midcourt Rd. #112

Carrollton, TX 75006

www.VacuumInterrupters.com

214-442-5877

WEIDMANN

Diagnostic Solutions

NETA PowerTest

March 2014

WEIDMANN

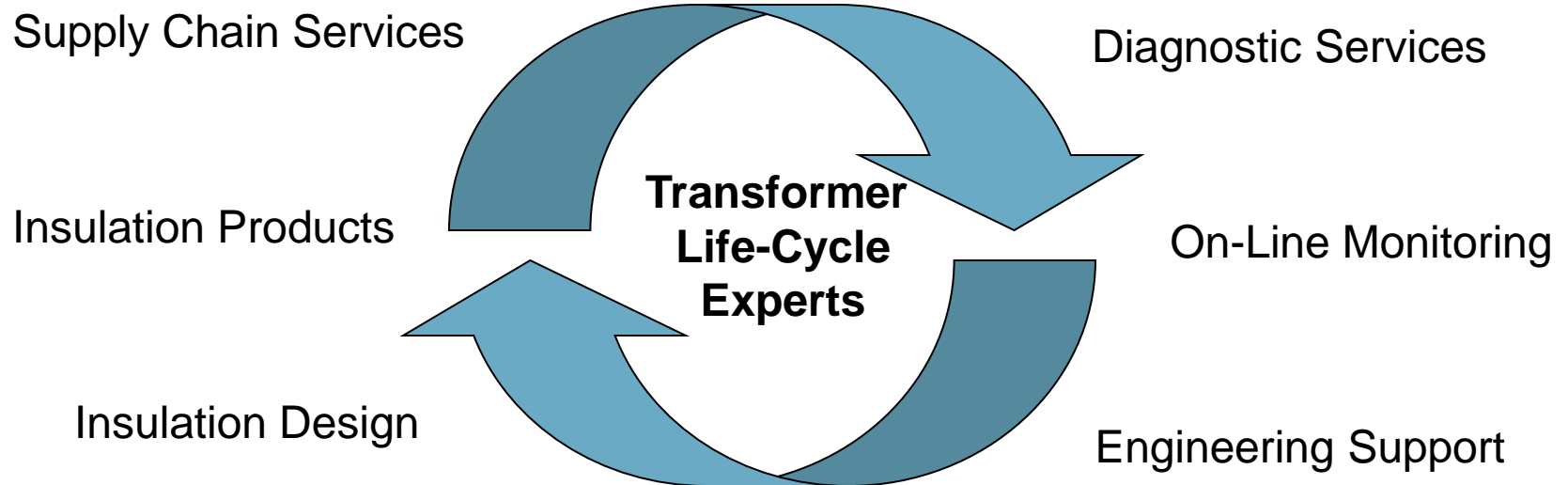
WEIDMANN DIAGNOSTIC SOLUTIONS INC.
A Member of the **WICOR** Group

ELECTRICAL TECHNOLOGY

WEIDMANN

WEIDMANN .

Manufacture —————→ **Operation**



Better Made, Better Operating, More Reliable Transformers

WEIDMANN

THANK YOU!

Thank you!